Climate change and sustainable consumption: What do the public think is fair?

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This report explores public attitudes to fairness in the context of sustainable consumption and climate change.

Evidence from many areas of behaviour suggests that views about fairness can be powerful in driving pro-social behaviours. This research, through a series of focus groups, explored strategies that can tap into people's sense of fairness around sustainable consumption and climate change to see if this could build public support for behaviour change and sustainability policies.

The report:

- asks if people can look at climate change and sustainable consumption in terms of fairness;
- explores the basis of views about fairness in this context and investigates the types of information required for people to look at the issue in this way;
- considers the extent to which looking at climate change in terms of fairness can motivate support for behaviour change; and
- examines what people think is fair in actions to reduce household CO_2 emissions.

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The Introduction describes the motivation behind the research, sets out the objectives and scope of the research, and outlines the structure of the report.

- Climate change and sustainable consumption involve huge issues of justice and fairness. Despite this, prevailing approaches to motivating sustainable consumption, by both government and non-governmental organisations, rarely talk about justice and fairness – indeed, they often actively avoid them.

- Much recent strategy for behaviour change – from both government and non-governmental organisations – has addressed behaviour within a 'consumer' paradigm. The result is that current behaviour-change strategies tend to be quite 'individualised', often focusing on the choices individuals make in isolation, and they seek to appeal primarily to self-interested concerns, such as financial self-interest. This precludes the opportunity to appeal to other motives that may be more effective in changing behaviour.

- There is a variety of evidence suggesting that beliefs about fairness can be powerful in driving pro-social behaviours. So one important route to building public support for sustainable consumption could be encouraging the public to look at the issue in terms of fairness.

- This research, through a series of deliberative focus groups, explored strategies that can tap into people's sense of fairness in relation to consumption and climate change in order to build public support both for behaviour change and for sustainability policies.

Chapter 1: Climate change as a co-operation dilemma

This chapter introduces the approach taken to studying public attitudes to fairness and climate change. It looks first at how to characterise the problem of climate change in terms of the consumption of a common-pool resource and, following this, at the fairness issues that emerge from this perspective. It also offers a brief review of evidence about public attitudes and behaviour in 'co-operation dilemmas' such as these, before drawing out a range of research questions and hypotheses for our focus groups.

- The earth's absorptive capacity for CO_2, including the remaining headroom between the current atmospheric concentration of CO_2 and the concentration that will precipitate dangerous climate change, is limited (for a given period of time, assuming fixed sink capacity). It can be thought of as a common-pool resource – a public 'good' that is non-excludable (everyone can use it) but rival (one person's consumption of it reduces the amount available for others to use).

- Important fairness issues arise in the consumption of common-pool resources, including questions of co-operation and free-riding (who is co-operating to maintain the resource?) and also questions of

distributive justice (what is a fair allocation of the resource?). These fairness issues relate to the importance of resource consumption for human welfare, on the one hand, and the harms resulting from a failure to co-operate in maintaining the resource, on the other.

- Attitudinal and behavioural evidence suggests that a substantial proportion of the population is predisposed to co-operate in the provision or maintenance of important public goods, including in environmental contexts, and that such co-operation is often driven by views about fairness (especially reciprocity).

- Our deliberative research investigates the extent to which people can look at climate change and sustainable consumption in fairness terms, and what this implies for the action they think should be taken to reduce CO_2 emissions.

Chapter 2: The focus groups

This chapter describes the approach taken to the focus groups and illustrates some of the stimulus material used. It also analyses our participants in terms of their environmental attitudes and behaviours.

- The general approach was to place participants in the role of decision-maker, providing them with the relevant information and asking them what they thought should happen.

- Participants were drawn from the full range of age groups and socio-economic categories and the focus groups were held at a variety of locations around the UK. We filtered out both hardened climate sceptics and committed green activists to ensure we were working with those groups of people most relevant to the project objectives.

- Post-hoc analysis of our participants shows they were weighted slightly towards the less 'environmentally friendly' end of the spectrum than the UK population as a whole, while avoiding hardened climate sceptics.

Chapter 3: Attitudes to climate change and carbon emissions

This chapter discusses participants' responses to the information they were given about climate change and carbon emissions, including the extent to which they were prepared to make normative judgements about household consumption and emissions.

- Discussing the potential impacts of climate change led to a strong sense that action must be taken to prevent dangerous climate change. Nevertheless, despite thinking these potential impacts were very bad and serious, participants reported a sense of detachment because the impacts were large-scale in nature, were temporally distant and involved complex causality and uncertainty.

- Illustrating the emissions associated with everyday behaviours enabled participants to link information about climate change to their own behaviour, occasionally drawing out feelings of guilt. Participants believed that society today had become too materialistic and had lost important values of thrift.

- In the context of carbon emissions, participants drew distinctions between 'necessary' and 'luxury' behaviours, and between 'necessary' and 'wasteful' behaviours.

- Participants were much more likely to see inequalities in household emissions or high household emissions as a problem after they had been given information on limitations in the earth's capacity to absorb CO_2 (that is, when they reflected on unequal consumption in the context of scarcity).

Chapter 4: Attitudes to fairness in reducing household emissions

This chapter explores what participants thought was fair in reducing household emissions, including what they thought might be a fair distribution of burdens across households. It also looks at participants' attitudes to different types of policy approaches, including issues of voluntarism and compulsion, and economic versus regulatory approaches.

- Participants thought that those with the greatest ability to reduce their CO_2 emissions should bear the greatest burdens of household emissions reduction. Key factors were whether the activities responsible were necessary or a luxury, the availability of alternatives, and also households' capability to adjust their behaviours (including ability to pay).

- The vast majority of participants believed that participation in a scheme to reduce household emissions should be compulsory and not voluntary. This was driven by a concern that a voluntary framework would allow some people to choose not to participate while others were dutifully co-operating.

- Some participants justified compulsion primarily in terms of the need to prevent climate change, but for most it was driven by a desire to prevent free-riding by others. Interestingly, while the former was susceptible to concerns about international action on climate change, the latter could be applied purely within a UK context, allowing support for compulsion to be separated from international issues.

- When asked to choose between tax and regulatory approaches to sustainable consumption, most participants had a strong preference for regulatory approaches. They believed taxes discriminated unfairly against those on low incomes, while leaving those on high incomes unaffected.

Chapter 5: Participants' changing attitudes in response to the focus groups

This chapter examines how participants' attitudes changed during the course of the groups, including their attitudes to climate change, environmental policy and personal behaviour change.

- In response to the information presented and the focus group discussions, our participants, on balance, became more concerned about climate change and more supportive of environmental policy than they were at the beginning of the groups.

- Perhaps reflecting the support for compulsion discussed in the previous chapter, participants became more concerned about other people's behaviour, including becoming more likely to think it was not worth acting if others did not do so too.

- Participants also became more positive and optimistic about personal behaviour change, even though this had not been discussed explicitly in the groups.

Conclusion: Lessons for policy-makers and advocates

The conclusion evaluates the project hypotheses and key research questions in the light of the analysis of the focus groups. Before highlighting some specific challenges for different stakeholders groups, this chapter also draws key lessons for policy-makers and advocates:

- Fairness and citizenship can drive support for sustainable consumption – but only if people understand the social context of behaviour.
- Ensuring everyone co-operates is key for perceptions of fairness – so regulation and enforcement can sometimes be crucial for sustaining public support for behaviour change.
- People want to feel that they are co-operating in an endeavour. Even if compulsion is used, people want measures to target the product or activity rather than the individual.
- People think sustainability policies should be progressive: the greatest burdens of behaviour change should be on those with the greatest ability to reduce their consumption or the greatest ability to finance reductions in their consumption.
- Viewed as measures to encourage behaviour change, 'economic' approaches, and specifically taxation, are often seen to fail the fairness test, although they are supported in some contexts.
- It may help to link the argument for behaviour change to the moral and policy arguments for sustainability.
- It is important to understand the difference between people liking a policy and supporting a policy because they see it as legitimate.

Introduction: Fairness and obligation as motivations for pro-environmental attitudes and behaviour

This project explores public attitudes to fairness in the context of climate change. The aim was to investigate the extent to which people could look at climate change and sustainable consumption in terms of fairness and, if they could, to find out what this implied for what they thought should be done to reduce household emissions. We investigated this through a series of deliberative focus groups in late 2010 and early 2011, which are analysed in this report.

This chapter describes the motivation behind the research, and the objectives and scope, before outlining the contents of this report.

The motivation behind the research

Climate change and sustainable consumption involve huge issues of justice and fairness. Human activity is changing the climate and environment in ways that risk significant harms to us and future generations, including threatening vital human interests. Some individuals and countries contribute more to this than others by consuming more than their sustainable share of resources. Some actions to avert dangerous climate change could impose burdens on individuals, from constraints on consumption to financial costs. How these burdens are to be shared fairly is a crucial question for public policy.

Despite this, approaches to motivating sustainable consumption by both government and non-governmental organisations rarely talk about these issues of justice and fairness – indeed, they often actively avoid them. Much recent strategy for behaviour change has addressed behaviour within a 'consumer' paradigm. Of course, there are very good reasons for this because we are all consumers and so this is an effective frame to influence our behaviour. But addressing people solely as consumers does not connect with other important dimensions of our attitudes and behaviour.[1]

The result is that current behaviour-change strategies tend to be quite 'individualised', often focusing on the choices individuals make in isolation. And they seek to appeal to relatively egocentric concerns, such as financial self-interest or the way in which choices about consumption construct our social identity. There is also often a lack of engagement with the range of possible motives for our consumption decisions and behaviour. Reducing consumption by appealing to individual financial gain is regarded as being as worthwhile as other possible ways of achieving the same outcome.

Considering the whole range of motivations for consumption

However, as a recent WWF report argues (WWF, 2008), there are reasons to think we should be concerned with the whole range of motivations that underpins consumption, especially when thinking about the long-term effectiveness of any strategy to change behaviour. As the WWF report points out, a self-interested reduction in consumption in one area may simply be offset by an increase in consumption in another: 'an individual might be less inclined to spend money saved by selling their car on an additional foreign holiday if they were motivated to part with their car for environmental reasons' (WWF, 2008).

Just as important, focusing narrowly on self-interested and self-oriented motives precludes the opportunity to appeal to other motives that may be more effective in changing behaviour. It is our contention in this report that pro-social instincts based on fairness and reciprocity could be especially strong drivers of attitudes and behaviour in relation to sustainable consumption. However, these instincts cannot be harnessed by using individualised, consumer-based narratives.[2]

The reluctance to talk about fairness in behaviour-change strategies seems surprising, given a variety of evidence that suggests fairness can be powerful in driving pro-social behaviours. There are numerous areas of life where citizens routinely comply with co-operative schemes, including schemes that require them to bear burdens or make significant efforts, and where they are willing to have such co-operation enforced. Among these are obeying laws, paying taxes and (in some countries) doing national military service.

Looked at from the perspective of the classical economist, with a focus on the rational self-interested actor, the degree of compliance with such co-operative schemes is nothing short of remarkable. The self-interest thesis would predict a huge degree of free-riding that does not transpire in practice.

Co-operation in sharing burdens

What do these types of collective action have in common? They are all schemes that require co-operation in sharing burdens in order to provide or maintain important public goods. The requirements of co-operation are often codified by rules and based on a widely shared notion of 'fair contribution', and there are mechanisms in place to sanction free-riders.

In these situations, most people's compliance turns out not to be solely or primarily motivated by self-interest, but rather by 'other-regarding' concerns, especially deep-seated norms of reciprocity and fairness (including anger at the violation of these norms). Although a proportion of individuals in these situations do act in a self-interested way, a significant section of the population do not. Usually, the numbers co-operating are sufficient to sustain the collective endeavour. And many people in these contexts, when asked about their behaviour, explicitly articulate a feeling of political obligation to comply with the scheme in question (Klosko, 2008).

In practice, behaviour can have multiple motivations and self-interest is very often a factor in decision-making for most people. But that does not mean self-interest is necessarily the dominant motive in all situations. It turns out that attitudes and behaviour are often based on reciprocity, rather than self-interest, in situations where individuals co-operate to provide important public goods.

In situations such as paying tax, many individuals do not particularly *like* having to do it; but they believe they *ought* to do it, and they do do it. In recent focus groups conducted by the Fabian Society, looking at attitudes to tax avoidance and beliefs about why we should pay tax, we found that individuals who disliked tax and thought tax rates were too high were nevertheless just as exercised about tax avoidance, and just as keen to enforce universal compliance with the tax system, as individuals who were happy about taxes.[3]

To summarise, there are situations where people will co-operate with a scheme to achieve important collective outcomes, even if they do not especially enjoy it, because they recognise the collective benefits achieved (or the harms avoided) and because they think it is fair to co-operate (and unfair to 'free-ride' on the efforts of others).

This evidence suggests that an important way to build public support for sustainable consumption could be encouraging people to look at the issue in terms of fairness. Do most people view sustainable consumption in terms of fairness at present? Probably not. Might they be able to? And, if so, how can this be facilitated? Would it be effective in changing attitudes and behaviour? These are the questions this project seeks to explore through a series of focus groups with members of the public.

Objectives of the research

Several key objectives emerge from the analysis above.

First, we wish to explore the extent to which people can look at climate change and sustainable consumption in terms of fairness, and the extent to which this provides the basis for normative judgements about consumption. Specifically, evidence from other areas of behaviour suggests that understanding the social context of behaviour can trigger a set of deeply held 'fairness instincts' surrounding collective action, relating particularly to co-operation and free-riding. We want to explore whether these same instincts apply to climate change and sustainable consumption.

Second, if people can look at climate change and sustainable consumption through the lens of fairness, we wish to explore this in more detail. What is it about the social context of behaviour that triggers these views about fairness? Is it a concern about environmental harms, inequalities in consumption, rule-breaking, disrespectful behaviour, or what?

Third, if fairness is a factor in how people look at sustainable consumption, what triggers these fairness instincts most effectively? For example, how important is information about environmental harm, or environmental scarcity, and what frames can successfully tap into widespread norms of co-operative behaviour? Conversely, if people struggle to look at climate change and sustainable consumption in terms of fairness, what are the barriers to this? For example, does the international dimension of climate change, or the 'temporal distance' of the most severe impacts, prevent people from approaching it in the same way as other dilemmas of collective action?

Finally, we wish to explore the extent to which the concept of fairness can motivate support for action to reduce CO_2 emissions – and, if it can, what people think is fair here. Specifically, what do people think is a fair distribution of burdens in reducing household CO_2 emissions and what kind of actions or policies do they think are fair?

This project forms part of the Joseph Rowntree Foundation (JRF) programme on Climate Change and Social Justice. The programme supports the development of socially just responses to climate change in the UK, seeking to ensure that people or places that face poverty and disadvantage are not disproportionately affected by climate change or by responses to it from policy-makers, practitioners and communities undertaking national or local mitigation and adaptation activity.

Scope of the research

This project investigates what the public think about actions and policies to promote sustainable consumption that are in some way 'burdensome' – by which we mean requiring effort, attention, inconvenience or sacrifice by individuals that they would not otherwise make. In the context of consumption, this usually refers to constraining personal behaviour: for example, by directly reducing or moderating one's own consumption or by supporting frameworks that make some types of consumption more expensive.

This is not to suggest, of course, that measures to promote sustainable consumption need necessarily be burdensome. Many important actions and policies to promote behaviour change can be directly beneficial to the individual, as with saving money on energy bills by insulating your house. However, these 'win–win' policies are (politically) far more straightforward: unlike some of the policies considered here, they do not constrain personal behaviour and so there is little issue about their public acceptability.

This concern with public acceptability explains two important aspects of the scope of this study. First, it means that our focus is on individual or household consumption, rather than on consumption by business, agriculture, government, and so on. Similarly, although fairness between countries is a key issue, here we are only interested in the international dimension of climate change insofar as it affects the extent to which individuals are prepared to take actions or support policies to promote sustainable consumption.

Second, our investigation is primarily concerned with what people think about measures that have direct implications for personal behaviour – such as behavioural and product regulations, voluntary actions by individuals to reduce their own consumption, taxes on behaviour, and so on. Again, this is not to suggest that measures to promote sustainable consumption need necessarily be of this type, but simply that these are the measures most relevant to the project hypothesis. Other measures that are crucial for tackling climate change – such as developing cleaner types of energy, increasing the energy efficiency of goods and services, or carbon capture and storage – are only considered when they have direct implications for personal behaviour, such as by making consumption more expensive.

There are two other constraints to point out about the scope of this project.

First, our recruitment avoided the 'extremes' of environmental views, focusing instead on the large majority of the UK population in between. Some evidence suggests that people are more prepared to submit to the burdens of a co-operative endeavour if they understand the benefits gained from co-operation (or the harms avoided). For this reason, our investigation focuses on those who do not reject outright the existence or possibility of climate change. At the other end of the spectrum, we also filtered out committed green activists since we were interested to work with those who are currently resistant to the idea of changing their behaviour or unsupportive of policies that require behaviour change, rather than those who are already strongly committed to them. More details are given in Chapter 2.

Second, our research used deliberative focus groups to study public attitudes, which means that it can only reveal attitudes and not behaviours. A knowledge of attitudes is important in its own right, as is a knowledge of how people respond when presented with information and arguments. And, of course, to the extent that attitudes are an important driver of behaviour, this kind of research can suggest the behavioural implications of different attitudes. However, many environmental studies have picked up a gap between attitudes and behaviour so our conclusions about personal behaviour can only be suggestive, pending further research.

The structure of this report

Chapter 1 sets out the theoretical and empirical background to the ideas explored in this research. It characterises the problem of climate change and sustainable development in terms of the consumption of a common-pool resource – the earth's absorptive capacity for CO_2 – and sets out the fairness issues involved in such a situation (a 'co-operation dilemma'). This chapter also reports on evidence from other contexts about public attitudes and behaviour in co-operation dilemmas. Finally, the chapter formulates in detail the research questions and hypotheses to be investigated in the deliberative research.

Chapter 2 details the approach taken to the focus groups, including the methodology, the recruitment of participants, and some of the stimulus material used. We also analyse the participants in terms of Defra's *A Framework for Pro-environmental Behaviours* (Defra, 2008a).

Chapters 3 and 4 analyse the results of the focus groups, illustrating the analysis with quotations from participants and commenting on the findings with respect to the key research questions and hypotheses. Chapter 3 looks at attitudes to climate change and household emissions, exploring the extent to which participants were sensitive to the fairness issues involved, their preparedness to make normative judgements about behaviour, and the basis of their views about fairness. Chapter 4 looks at what participants thought would be a fair approach to reducing emissions, including what they thought would be a fair distribution of burdens and what policy approaches they supported – again, scrutinising the basis of these fairness judgements.

Chapter 5 examines how participants' attitudes changed during the course of the groups, including their attitudes to climate change, environmental policy and personal behaviour change.

Finally, the Conclusion draws out some of the main themes of the analysis, presenting them as a series of key lessons for policy-makers and advocates. It suggests how our findings could be applied to policy-making and to communications strategies for behaviour change.

1 Climate change as a co-operation dilemma

This chapter introduces the approach taken to studying public attitudes to fairness and climate change. The first section sets out the theoretical background, characterising the problem of sustainable consumption and climate change in terms of the consumption of a common-pool resource. The second section looks at the fairness issues that emerge from this perspective. The third section offers a brief review of evidence about public attitudes and behaviour in 'co-operation dilemmas' such as these. The final section draws out a range of research questions and hypotheses for our focus groups.

Characterising the problem of sustainable consumption and climate change

Climate harms

The starting point for any discussion of the social justice implications of climate change must surely be the recognition that people have fundamental interests (for health and quality of life) in accessing environmental 'goods' (such as clean air and water, or a safe physical environment) and in being protected from a range of environmental 'harms' (such as toxic pollution, extreme weather events or rising sea levels). Our ability to enjoy many of these goods, and to avoid these harms, depends on maintaining the earth's surface at temperatures that support our climate and keep our environment conducive to human well-being.

Severe global warming would bring about temperature rises that would cause dangerous climate change, currently taken by many experts to be temperature rises in excess of 2°C. Such climate change would create a range of environmental risks and harms, some of them irreversible. These include direct environmental risks and harms, such as rising sea levels, an increase in the frequency of extreme weather events such as storms, flooding, heatwaves and droughts, and damage to ecosystems. They also include knock-on social and economic risks and harms, such as the loss of coastal habitats, population displacement, reduced water availability, reduced agricultural yields and higher incidence of infectious diseases.

Some consider such human interests weighty enough to generate 'rights' for citizens (see Nickel (1993), for example). And rights to access important environmental goods and to be protected from environmental harms also imply corresponding duties upon citizens and governments – namely to help maintain such goods and to refrain from activities that cause such harms (or, at least, to refrain from activities that generate unacceptable levels of risk that others will suffer such harms). Although some may not describe these interests as 'rights', nearly all would recognise that people have fundamental interests in not suffering environmental harms and that this generates some kind of responsibility on others not to harm them.[4]

This point assumes particular importance in the case of climate change, given that these possible future environmental harms are being caused in part by human activity that is releasing increasing amounts of greenhouse gases (GHGs), especially carbon dioxide (CO_2), into the atmosphere faster than the earth's natural environmental systems (sinks) can remove or absorb them. This causes the concentration of GHGs in the atmosphere to increase so that the atmosphere traps more of the sun's energy (the greenhouse effect), which warms the earth's surface. There is therefore a causal link between our behaviour that generates GHGs and the potential harm caused to others by climate change.

Many questions about climate change and social justice are therefore questions of 'duty-bearer' justice (Caney, 2009). Who has a duty to bear the burdens of preventing dangerous climate change and what is the nature of these duties? What level of obligation can individuals legitimately be subject to? And are such duties practically feasible? These are key questions for any approach to building public support for measures to prevent dangerous climate change.

By exploring views about what is fair when it comes to carbon emissions and efforts to reduce them, and by looking at the public acceptability of various measures to reduce household emissions, this project hopes to make an important contribution to these questions of duty-bearer justice.

The earth's absorptive capacity

Once released into the atmosphere, GHGs remain there until they are removed or absorbed by environmental sinks. For example, carbon dioxide is removed from the atmosphere through plant photosynthesis and by dissolving in the oceans, while methane is removed primarily by its reaction with hydroxyl radicals in the troposphere. The atmosphere is thus essentially a 'holding bay' for GHGs prior to their removal (Starkey, 2008).[5]

The concentration of GHGs in the atmosphere is therefore determined by the balance between the rate at which GHGs are emitted into the atmosphere and the rate at which they are removed. The capacity of sinks to remove or absorb certain quantities of GHGs from the atmosphere, combined with the capacity of the atmosphere to act as a holding bay for GHGs prior to their removal by sinks, can be thought of as the earth's absorptive capacity for GHGs (henceforth 'the earth's absorptive capacity' or 'the earth's absorptive capacity for carbon dioxide').

So the earth's remaining available absorptive capacity, consistent with avoiding dangerous climate change, is a public good. It currently maintains atmospheric irradiance (the difference between incoming radiation energy and outgoing radiation energy) at levels necessary to keep surface temperatures within the range necessary for us to enjoy our current climate and environment. However, this is a resource that is effectively 'consumed' by behaviours that emit GHGs.

Before the industrial era, naturally occurring cycles of emission and removal for each greenhouse gas kept the atmospheric concentration of GHGs within a fairly narrow range, around 280 parts per million by volume (ppmv).[6] However, since the beginning of the industrial era, human activity has released increasing quantities of GHGs into the atmosphere, faster than they can be removed or absorbed, thereby increasing their concentration in the atmosphere to 390 ppmv today.[7] Consequently, the greenhouse effect is strengthening and the earth's temperature is rising, with knock-on effects for the climate and environment.

Though there are various different estimates of the atmospheric CO_2 concentration that might give rise to warming in excess of 2°C (the level for dangerous climate change), the central estimates tend to be in the 450–500 ppmv range.[8] So assuming that we wish to avoid dangerous climate change, the earth's absorptive capacity is limited. GHG emissions that exceed the sinks' capacity to absorb them will increase the atmospheric concentration of GHGs. For a given sink volume, there will be a limit to the quantity of GHGs that can be emitted over a fixed period of time before the atmospheric concentration of GHGs exceeds the threshold for dangerous climate change.

The earth's absorptive capacity as a common-pool resource

The earth's remaining available absorptive capacity consistent with avoiding dangerous climate change has some particular properties that mark it out as a special type of public good: a common-pool resource.

First, it is available to everyone collectively (it is joint in supply) and it is 'non-excludable': anyone can emit GHGs into the atmosphere and, in doing so, appropriate some of this absorptive capacity.

Second, it is consumed privately and so can be depleted. As individuals consume units of this absorptive capacity, the units are subtracted from the available stock which means the resource is scarce.[9] This property makes the earth's absorptive capacity what economists call a 'rival good': one person's consumption of it reduces the amount available for others to consume.[10]

A public good that is non-excludable but rivalrous is called a 'common-pool resource' or, by analogy with common land, a 'commons'. Other examples of common-pool resources are fish stocks or water from a lake. Common-pool resources are therefore distinguished from 'pure public goods', such as national defence and free-to-air television, because the latter are non-rivalrous: they are consumed collectively so that one person's consumption of them does not reduce the amount available for others to use.

This way of characterising the problem of climate change brings out some key aspects that will be useful for analysing the fairness issues involved. The earth's absorptive capacity (including the remaining headroom between the current atmospheric concentration of CO_2 and the concentration that will precipitate dangerous climate change) is a scarce resource that is used up by a multitude of CO_2-emitting activities, including some that are very important for human welfare. All can use this capacity for their individual benefit, but it can be depleted through over-use. Maintenance of this capacity is necessary to retain aspects of the climate and environment that are indispensable for human welfare.

How the earth's absorptive capacity differs from other common-pool resources

The consumption of the earth's absorptive capacity for carbon dioxide differs in some significant ways from other typical instances of consuming common-pool resources. These may well have implications for the way in which people think about sustainable consumption and climate change.

First, the emission of carbon dioxide occurs as a by-product of behaviour, rather than being the objective of behaviour. For example, emissions from road transport occur as a by-product of travel. (Compare this to other examples of consumption, such as depleting the water in a lake by using it for irrigation; here, the use of the water is the purpose.) Similarly, we wish to maintain this absorptive capacity to support the existence of a beneficial climate and environment, not as an end in itself. So the relationships between human behaviour, consumption of the resource and the harms of depleting the resource are complex and indirect.

Second, the most severe impacts of depleting the resource – dangerous climate change – will unfold over long timescales, encompassing many generations. The precise nature of these impacts is also hard to predict, reflecting the probabilistic nature of climate modelling. There is therefore significant temporal distance between human consumption and the harms of resource depletion, as well as an important element of uncertainty in what the consequences of over-consumption will be.

Finally, whereas most instances of common-pool resources are relatively 'local' phenomena, contained to a particular area, climate change is a global phenomenon, with all countries contributing to it and all likely to experience the impacts. This international dimension means the co-operation dilemma is very large scale, and the community of people involved is very wide. And, of course, this community expands even further when the intergenerational dimension of climate change is taken into account.

We return to all these issues in later sections.

Fairness issues in the consumption of common-pool resources

These properties of the earth's absorptive capacity for CO_2 – that it is non-excludable and rivalrous – give rise to a range of important fairness issues relating to the amount of CO_2 that individuals emit. Two important fairness issues that are explored in this project are:

- co-operation and free-riding in efforts to maintain the concentration of CO_2 in the atmosphere below that which will precipitate dangerous climate change;

- distributive justice in terms of how much of the earth's absorptive capacity people use and who should bear the burdens of reducing CO_2 emissions.

Co-operation and free-riding

Many common-pool resources can only be maintained through the co-operation of a large number of people in a way that limits their consumption (potentially imposing burdens on them or requiring sacrifices). Since these resources are non-excludable, they are subject to the 'free-rider problem' that some individuals ('free-riders') may choose to consume more than their 'fair share' or fail to co-operate in meeting the costs of maintaining the resources.[11] In such contexts, a self-interested actor could reason as follows: 'Either others will co-operate to provide the public good and I shall receive it anyway – in which case I need not contribute – or others will not co-operate to provide the good and my contribution will make no difference – in which case there is no point contributing. So I will not contribute.' From a self-interested perspective, it is individually rational for a person to free-ride. However, it is collectively irrational to do so: all individuals in the group (including the free-rider) are harmed from a failure to provide the good, and would be better off co-operating to provide it than not co-operating and suffering the consequences. In this report, we will use the phrase 'co-operation dilemma' as a shorthand for describing scenarios like this.

What is wrong with free-riding? Most answers to this question start from norms of 'equality of status' and 'equality of treatment': that similar individuals should be treated similarly in the absence of morally relevant differences between them. In this context, free-riding is unfair because it is wrong for some individuals to enjoy the benefits that arise from others submitting themselves to the burdens of a co-operative scheme whilst themselves remaining exempt from those burdens. The result is an unfair distribution of burdens.[12]

A related objection to free-riding, also rooted in this norm of equality of treatment, is that it is disrespectful to others. As Stuart White (2003) has put it, by taking advantage of others' contributions without making a contribution in return, the free-rider is treating fellow citizens in an offensively instrumental way.[13]

Beyond the violation of equality of treatment, however, there are some more specific harms that result from free-riding when a co-operative scheme involves the allocation of a rival good (as with the earth's absorptive capacity for CO_2), since the over-consumption of a rival good depletes it for everyone else. With common-pool resources, the consequences of over-consumption by some will be manifest in one of two ways:

- The resources will be depleted and all will collectively suffer the harms that result.

- Others must consume less than their fair share in order to maintain the resources.

Both constitute a type of harm – causing environmental damage, on the one hand, or appropriating other people's resources and so reducing their ability to consume, on the other. In this project, we will explore the role of these free-riding harms in people's attitudes to fairness in CO_2 emissions, where excessive emissions may either precipitate dangerous climate change or put greater pressure on everyone else to limit their own emissions.

These two different types of harm, however, highlight very important questions about defining the community of individuals in a co-operative scheme, which we discuss briefly below.

Box 1: When is there an obligation to co-operate?

In what circumstances do the members of a community have an obligation to co-operate with collective endeavours that provide or maintain important public goods?

In a formula that has become known as the 'principle of fairness' (or 'principle of fair play'), Herbert Hart (1955) articulated the principle underpinning the obligation to co-operate as follows:

> *When a number of persons conduct any joint enterprise according to rules and thus restrict their liberty, those who have submitted to these restrictions when required have a right to a similar submission from those who have benefited by their submission.*[14]

Specifically, there are many situations where a group of people co-operate in order to provide or maintain a particular good in a way that imposes burdens on those co-operating, but where the benefits produced can also be received by those who do not co-operate. Hart's argument is essentially that the need to ensure fairness is sufficient to generate an obligation on the whole community to co-operate.[15]

There has been considerable debate in political philosophy about the legitimacy of this principle and the contexts in which it might be appropriate. In some situations, this unfairness could be rectified in one of two ways; neither of these need impose an obligation on others to co-operate. First, those who do not co-operate could be excluded from receiving or using the good in question; second, the community could simply decide to cease to provide or maintain the good.

Non-excludable, indispensable goods

However, there are certain types of public good where neither of these approaches is possible. If the good in question is non-excludable (such as a common-pool resource), it is not possible to exclude those who do not co-operate.[16] And if the good in question is indispensable for human welfare, it is not a viable option to cease to provide or maintain it. Both these criteria clearly apply to the earth's absorptive capacity and the set of climate and environmental goods that it sustains.

Beyond this, advocates of Hart's principle of fairness generally identify two further conditions that apply to obligations to co-operate. The first is that the benefits produced by the co-operative scheme must generally be worth the burden of co-operation, which is likely to be relatively straightforward if the good in question is indispensable for human welfare. The second is that the benefits and burdens of the co-operative scheme must be fairly distributed across the population. In practice, this means that the distributive principle underpinning the co-operative scheme must have been selected through fair procedures and be defensible by reasonable arguments that do not breach other basic tenets of justice.

So Hart's principle seems to apply most uncontroversially to non-excludable and indispensable public goods. Here, there is a strong fairness argument that everyone has an obligation to co-operate in the provision or maintenance of the good – and a justification for enforcing that obligation.[17]

Who is the community of individuals concerned?

Because climate change unfolds over long timescales, it opens up issues of intergenerational justice: the burdens of co-operation borne by people today will be important primarily in order to protect the climate in future. Similarly, because climate change is necessarily a global phenomenon, it opens up issues of

international justice: the burdens of co-operation borne by people in any particular country will be important for protecting the climate across the globe.

In thinking about co-operation and free-riding in relation to the impacts of dangerous climate change, it is clear that these intergenerational and international dimensions imply a very wide definition of the community of individuals involved, embracing different countries and different generations.[18] This has consequences for the extent to which the first type of harm from free-riding – dangerous climate change – can motivate a sense of obligation to co-operate or can sustain co-operation. It may well be that the international and intergenerational aspects of this co-operation dilemma, including the practical difficulties of co-ordinating and enforcing action across national boundaries, make it impossible for the prospect of dangerous climate change by itself to generate a sense of obligation to co-operate.

However, the second type of harm from free-riding – that others must reduce their consumption to compensate – sidesteps these issues of international and intergenerational justice in some respects because it is instead defined by the coverage of a policy framework. It still requires a collective commitment by a country not to consume more than a certain amount of resources (which may still rest upon a perceived responsibility to future generations and those in other countries). But the harms imposed by free-riding are understood to fall upon fellow citizens: your excessive consumption has to be offset by their reduced consumption. So, with this second type of harm, the issues of co-operation and free-riding can be considered within quite a narrow definition of a community. For this reason, it may well be that this is a more powerful frame for engaging a sense of fairness in thinking about climate change than focusing on the harms of dangerous climate change. Beyond an initial commitment to reduce aggregate consumption at the level of the community, it then only requires a feeling of obligation to fellow citizens.[19]

Distributive justice

The rivalrous nature and scarcity of common-pool resources also raise issues of distributive justice. If a resource is consumed privately by individuals and there is, in effect, a limited amount of it, this leads to the question of what a fair share of resources would be for each individual or household.

This is particularly the case when human welfare is at stake. Given that there is a limited amount of CO_2 that we can emit into the atmosphere whilst avoiding dangerous climate change (over a fixed period of time, for a given sink capacity), yet the emission of CO_2 is currently a by-product of many activities that are important for human welfare, how much should each individual or household (or country) emit? Note that it is scarcity that gives rise to these issues of distributive justice, including the notion of a 'fair share'. Understanding the capacity limits of the earth's climate system is therefore crucial for bringing these issues into play.

Importantly, if the notion of a fair share of emissions is accepted, it brings with it a notion of 'excessive consumption', whereby individuals or households exceed their fair share. One type of free-riding in the context of common-pool resources would be intentionally consuming more than one's fair share – so these issues are fundamentally linked.

One of the key objectives of this research is to look at the extent to which information about resource scarcity can trigger views about fairness, including notions of fair shares and excessive consumption. We also wish to explore the extent to which these notions have a normative dimension in public attitudes – that is, the extent to which they carry moral force – and why they do so. When given information about the social and environmental context of consumption, to what extent do people think it is bad to emit large amounts of CO_2? And we also wish to explore how these notions relate to common theoretical concepts such as 'subsistence emissions' and 'luxury emissions' (see Shue (1993), for example).

Most accounts of a fair distribution of emissions start with the idea that all humans have an equal claim on the earth's absorptive capacity. Starkey (2008) discusses the basis of this claim, observing that it

will differ depending on whether you regard the earth's absorptive capacity as commonly owned, on the one hand, or unowned, on the other (with most accounts adhering to the latter view). According to Starkey, viewing the earth's absorptive capacity as unowned means that equal claims on it, rather than being grounded in ownership rights, will often be grounded in its universal importance for human welfare.

Some accounts then move straight from the idea of an equal claim on the earth's absorptive capacity to the idea of an equal per capita allocation of emissions. But, from a fairness perspective, there are potential problems with equal allocation per capita, especially for accounts that ground our claims to emit CO_2 in its importance for human welfare. People have different needs and capabilities, so an equal per capita allocation of emissions would have very different impacts on people's welfare. For example, someone living in a colder climate or who feels the cold more may need more energy for heating (which, for the moment, we are assuming involves the combustion of fossil fuels). Accordingly, most discussions of a fair distribution of emissions take an equal per capita allocation as a 'baseline' and discuss necessary deviations from this in order to meet a more sophisticated conception of equal welfare.[20]

In this project, we are interested to explore what people think is a fair distribution of emissions across the population (including the extent to which they have an underlying notion of equal per capita allocation). However, we do this primarily by investigating what people think is a fair distribution of burdens in reducing CO_2 emissions. This is less abstract than discussing hypothetical allocations of carbon and also allows us to take current (unequal) patterns of consumption across society as a starting point and to investigate what people think should change in order to reduce aggregate household emissions.

We are also interested in the extent to which people think allowances should be made for individuals' different capacities to adjust their behaviours, and also whether ability to pay should be taken into account or whether we should have some special regard for the poorest. These are potentially difficult issues: they are crucial to protect the most vulnerable in society but mean that proposals for behaviour change will depart from 'equality of treatment', which may itself be important for a sense of fairness and public legitimacy.

Are these fairness issues different in the context of climate change compared to other examples of common-pool resource consumption?

How do the fairness issues that arise in the context of sustainable consumption and climate change differ from standard accounts of fairness and obligation in the consumption of common-pool resources?

First, while some impacts are already felt, many of the harms of dangerous climate change will unfold over many generations. The temporal distance of the most severe impacts may well affect the extent to which people can view this issue in terms of fairness within a community. Related to this are more general questions about the strength of the moral responsibility people may or may not feel towards future generations. Recognising obligations to those in future generations (and in other countries) requires an acceptance of the fundamental equality of human beings, now and in future. It requires an acceptance that they too have interests that may be harmed by our actions and that these interests are weighty enough to generate duties and obligations upon us. In this project we investigate whether in practice people feel the force of such responsibilities towards future generations sufficiently strongly to justify obligations to comply with the burdens of co-operation.

Second, tackling climate change requires global action where all engage in appropriate efforts to consume sustainably (compatible with fairly differentiated responsibilities for different countries). Although the harmful impacts of climate change will be felt around the globe, beyond the jurisdiction of any one national institution, it is only national institutions that currently have the political authority to enforce compliance and prevent free-riding among individuals. So all could be harmed by the inaction of one country, but there is no ability to sanction the individuals involved. This international dimension may therefore be another factor that potentially undermines people's ability to view this issue in terms of a

community co-operating to maintain the benefits of a public good. In particular, the difficulties of enforcing collective action across national boundaries may well make it impossible for the challenge of sustainable consumption in a global context to tap into the same kind of fairness instincts in relation to individual behaviour as we have seen in other contexts.

Where these intergenerational and international aspects of climate change weaken the sense of fairness surrounding consumption or weaken perceived obligations to co-operate, another approach will be to look at issues of consumption within a contemporary society, where scarcity is effectively imposed by a collective commitment to reduce aggregate emissions. We discuss this further later.

Public attitudes and behaviour in co-operation dilemmas

In recent decades, the classical economic view of people as rational, self-interested actors has been comprehensively challenged by evidence from economics and social psychology. Far from simply worrying about their own outcomes, people can also care deeply about what others gain or lose, as well as caring about the fairness of procedures. Such pro-social (or 'other-regarding') motives are demonstrated in the attitudes and behaviours of a substantial fraction of the population. Many of these attitudes and behaviours involve reciprocity – a predisposition to co-operate with others and to punish those who violate the norms of co-operation.[21]

In this section we review some of this evidence in the context of co-operation dilemmas, exploring the extent to which the fairness issues analysed in the previous section are manifest in real life, whether in small-scale or large-scale contexts. Following this, we look at some evidence concerning the psychological reality of these issues in environmental attitudes and behaviour.

Co-operation in experimental settings: public goods games

People's propensity to co-operate in groups has been studied extensively in social psychology and experimental economics through 'public goods games'.[22] In these experimental settings, only a fraction of subjects (around a quarter) tend to behave in a purely self-interested way; many others (40–50 per cent) behave in an other-regarding way, showing a willingness to co-operate provided that others do so too, along with a willingness to punish free-riders even at personal cost to themselves.[23]

The public goods game is an experimental game played with several players over multiple rounds. Each player starts with a certain amount of money and in each round can choose how much of their money to put into a public 'pot'. Each player keeps the money they do not put into the pot, whereas the money in the pot is shared out equally among all players after being multiplied by a certain factor (reflecting the gains to co-operation). So, placing money into the public pot has a cost to the individual, but the individual gains more by doing so than by simply keeping the money so long as other players also contribute to the pot.

The self-interest hypothesis would predict free-riding: that is, zero contributions to the pot, with participants retaining their own money privately whilst benefiting from the contributions of others. In fact, only a fraction of subjects typically behave in this way.

Initially, many make contributions to the pot but this level of co-operation tends to decay in subsequent rounds of the game. The reason for this (as reported by subjects in interviews after the games) is that participants become angry with those who are free-riding and retaliate in the only way available to them: by withdrawing co-operation (Fehr and Schmidt, 1999).

Experimental evidence supports these subjective reports. In versions of the public goods game where subjects are allowed to punish free-riders (by fining them) at a cost to themselves (by paying a fee), significant numbers do. This punishing behaviour also contradicts the self-interest hypothesis which predicts that no-one would punish anyone else, since it costs them a fee to do so.

Since being fined costs free-riders money, the possibility of punishment in these games tends to induce them to co-operate. In this situation, co-operation is not only maintained through repeated rounds

but also tends to increase steadily until, by the final rounds, almost all participants are contributing their full endowment. Conversely, if the punishment option is removed from a public goods game, co-operation deteriorates.

So the interaction between different groups within a population is essential to the dynamics of human co-operation. The presence of reciprocators (who punish free-riding and reward co-operation) changes the incentives for self-interested individuals and induces them to behave in a 'co-operative' way (Fehr and Gächter, 2000). Note, though, that it is the existence of a sanctioning mechanism that is key to the maintenance of co-operation and changes the incentives for putative free-riders. Without it, co-operation unravels because just a small number of free-riders can induce reciprocators to withdraw their co-operation and start free-riding themselves (Fehr and Fischbacher, 2005).

It is worth asking if the co-operation observed in public goods games is strategic, motivated by the expectation of future economic benefit, or non-strategic, motivated by fairness? Some types of apparently reciprocal behaviour can be explained in terms of long-term self-interest, particularly in 'repeated interactions' where there is the opportunity for future payback if one acquires a reputation for sanctioning free-riders. Here, apparently non-self-interested behaviours could be strategic because they increase the likelihood of benefits accruing to you in subsequent interactions.[24] If so, this may undermine the claim that this kind of behaviour provides evidence of other-regarding motivations that could be applicable to 'real world' co-operative settings such as sustainable consumption.

In fact, there is important evidence for discounting self-interest as the motivation for co-operation in public goods games. It is possible to run several games simultaneously and mix the participants between each round so that no two people encounter each other more than once (a 'perfect stranger' design). The sanctioning behaviour in perfect stranger designs remains similar to that in games in which participants stay together, despite the fact that there is no strategic advantage in it since a fluid population precludes the formation of reputations (Fehr and Fischbacher, 2005). The fact that people behave co-operatively in 'perfect stranger' interactions is evidence that some reciprocal behaviours are indeed other-regarding and non-strategic.[25]

Co-operation in 'real world' settings

Evidence for co-operation in groups in 'real world' settings has been documented by political scientists, economists and anthropologists. For example, Elinor Ostrom (1990) has studied many instances of small-scale or local co-operation, where groups co-operate in the management of local resources, such as irrigation systems in the Philippines or the communal tenure of meadows in Switzerland. Ostrom shows that individuals co-operate successfully to maintain these goods, provided the rules are understood and mechanisms are in place to sanction free-riders.

Evidence for people's propensity to co-operate in the provision of public goods is also found in large-scale contexts in the provision of important national public goods. One obvious example is people's belief that they should obey national laws – even if they disagree with the law or it inconveniences them (Tyler (1990) contains the classic study of attitudes to obeying the law). In one survey (Klein and Klosko, 2001), 95 per cent of respondents agreed that they should obey the law and, significantly, large majorities continued to agree they should obey the law 'even if it inconveniences me' (95 per cent) and 'even if it inconveniences me greatly' (86 per cent).[26]

In a deliberative study, Klosko (2008) explored views about the obligation to co-operate with large-scale schemes providing important public goods, such as compulsory military service. Participants generally believed it would be wrong not to co-operate, often citing the importance of the benefits provided and the harms caused by failure to do so. And interestingly, even though some writers have claimed that group co-operation of the sort discussed here is only found in small-scale settings, the participants in Klosko's research clearly thought the scale of the collective endeavour made little difference to the obligation to co-operate, seeing no distinction between national schemes and examples of localised 'face-to-face' co-operation.[27]

This attitudinal evidence about large-scale co-operation is often seen reflected in behaviour too. A good example would be people's propensity to pay taxes (even if they do not like doing so), where many studies have looked at compliance and evasion, and the attitudes associated with them. One key motive in tax compliance is fear of being caught cheating (Andreoni, 1998). However, research shows that other motives are important too: people are more willing to pay taxes if they understand that the revenue goes towards providing important public goods (Lewis, 1979), if they believe the system as a whole is fair (Carroll, 1992) and if they believe others are paying their fair share too (Song and Yarbrough, 1978). Spicer and Lundstedt (1976) looked at the factors most closely associated with evasion of taxes or resistance to paying and found, strikingly, that the severity of sanctions for evading taxes had no effect. By far the most important factor was the perceived fairness of the system, especially the perception of whether or not others were complying.[28]

To summarise, all the studies cited above – whether in experimental or real world settings, and whether small-scale or large-scale – suggest that people's propensity to co-operate with the burdens of a collective scheme, and the obligations they might feel to do so, are strongly dependent on their perceptions of whether other people are co-operating (or are willing to co-operate). On some occasions this seems to reflect an awareness that the public good itself can only be provided in conjunction with others; on other occasions it appears to be rooted in a sense of fairness and a desire to avoid an unfair distribution of burdens across the population. In this project, we shall explore the extent to which this sentiment figures in public attitudes to behaviour change and sustainable consumption.

Can we also look at environmental behaviour in this way?

The fact that many environmental resources, especially common-pool resources, are instances of public goods suggests that similar co-operation dilemmas should arise in how we consume these resources. But can the kinds of attitudes and behaviours described above apply to environmental consumption?

The psychologist Paul Stern has argued that pro-environmental behaviour can occur in response to personal moral norms being 'activated' in individuals (Stern, *et al.*, 1986; Stern, *et al.*, 1999) and that this will tend to happen most strongly in those with pro-social values (Stern, *et al.*, 1995; Karp, 1996).[29] This is reinforced by evidence showing that environmental concern is higher among individuals with pro-social, rather than individualistic, outlooks (Van Vugt and Samuelson, 1999) and evidence showing that pro-social values are stronger among people engaging in pro-environmental activities (Stern and Dietz, 1994).

In 'norm-activation' theory, the actual activation of norms is triggered by particular beliefs (Schwartz, 1970; Schwartz, 1977). Drawing on this work, Stern (Stern, *et al.*, 1986) argues that the activation of pro-environmental norms is triggered by two factors that seem especially important in determining whether normative feelings of 'right' and 'wrong' will guide attitudes and behaviour:

- a recognition by individuals that particular environmental consequences will cause harm to others, and an assessment of the perceived severity of this harm;

- a recognition that the individual has the power to avert those consequences.

Stern suggests that, 'mobilisation of support for [environmental] causes will be more successful when the causes are framed in terms of avoiding harmful consequences to people and in ways that lead potential converts to see themselves as personally responsible' (Stern, *et al.*, 1986).

Beyond the point that environmental behaviour can be guided by normative judgements, it is worth asking to what extent people think of sustainable consumption as a co-operative endeavour, and to what extent this colours their perceptions of fairness. Recent deliberative research on sustainable consumption suggests these factors do indeed play an important role. For example, a recent project for the Sustainable Consumption Roundtable (2006) reported that:

Fairness matters. People want to ensure that interventions are fair and are not open to abuse by free-riders or manipulation by 'rich' people. Interventions are perceived to be fair when the polluter pays in proportion to their impact … and no-one is let off the hook.

A citizens' summit conducted by Defra (Opinion Leader Research, 2007) to investigate the idea of an environmental contract found that fairness criteria figured strongly in participants' reasoning, particularly the need to ensure that obligations were enforced and burdens were distributed fairly across society. This is also a strong message from detailed studies of the public acceptability of particular policies, such as personal carbon trading (Defra, 2008b; Bird and Lockwood, 2008; RSA, 2008).

These findings suggest that people are able to think about sustainable consumption as a potential co-operative endeavour. This could enable the harnessing of what we have seen can be potentially powerful fairness instincts about the obligation to co-operate.

Applying the analysis to climate change: questions and hypotheses for the focus groups

This section draws on the theoretical analysis and empirical evidence discussed earlier to formulate the research questions and hypotheses for the deliberative research. We discuss further what is required for people to see sustainable consumption and climate change in terms of fairness, and what barriers might prevent them from doing so.

What is necessary for people to look at sustainable consumption and climate change as a co-operation dilemma?

Evidence from many areas of behaviour suggests that understanding the social context of consumption can trigger a set of deeply held fairness instincts surrounding collective action, relating particularly to co-operation and free-riding. The central aim of this project was to explore whether or not people are able to look at the problem of sustainable consumption and climate change in this way – as a co-operation dilemma – and what types of information are needed in order for them to do so.

By 'social context', we mean an understanding of how one's own behaviour and that of others has consequences that impinge on society as a whole, and, specifically, the way in which over-consumption can harm others. What precisely does this involve? The evidence reviewed so far suggests a few important components.

The work of Stern, cited above, highlighted two important elements: that people recognise there are harmful consequences when important environmental resources are depleted; and that people see themselves as personally responsible for consuming resources.

However, there is a further ingredient necessary to connect consumption with depletion: the information that the resource in question is scarce. It is the notion of scarcity that allows people to relate behaviour to harmful consequences: to see that over-consuming a resource will deplete it. The notion of scarcity also allows people to recognise the implications of one person's behaviour for others in the group: that over-consuming a resource appropriates it at the expense of others. Finally, it is the notion of scarcity that implies concepts such as fair shares and excessive consumption. So the notion of scarcity is a crucial part of how people need to understand the consumption of a common-pool resource in order to view it as a co-operation dilemma. This is often the 'missing ingredient' in narratives about sustainable consumption and climate change.

To summarise, the presence of the following information should in general allow people to view resource consumption as a co-operation dilemma:

- acceptance of the scarcity of the resource;

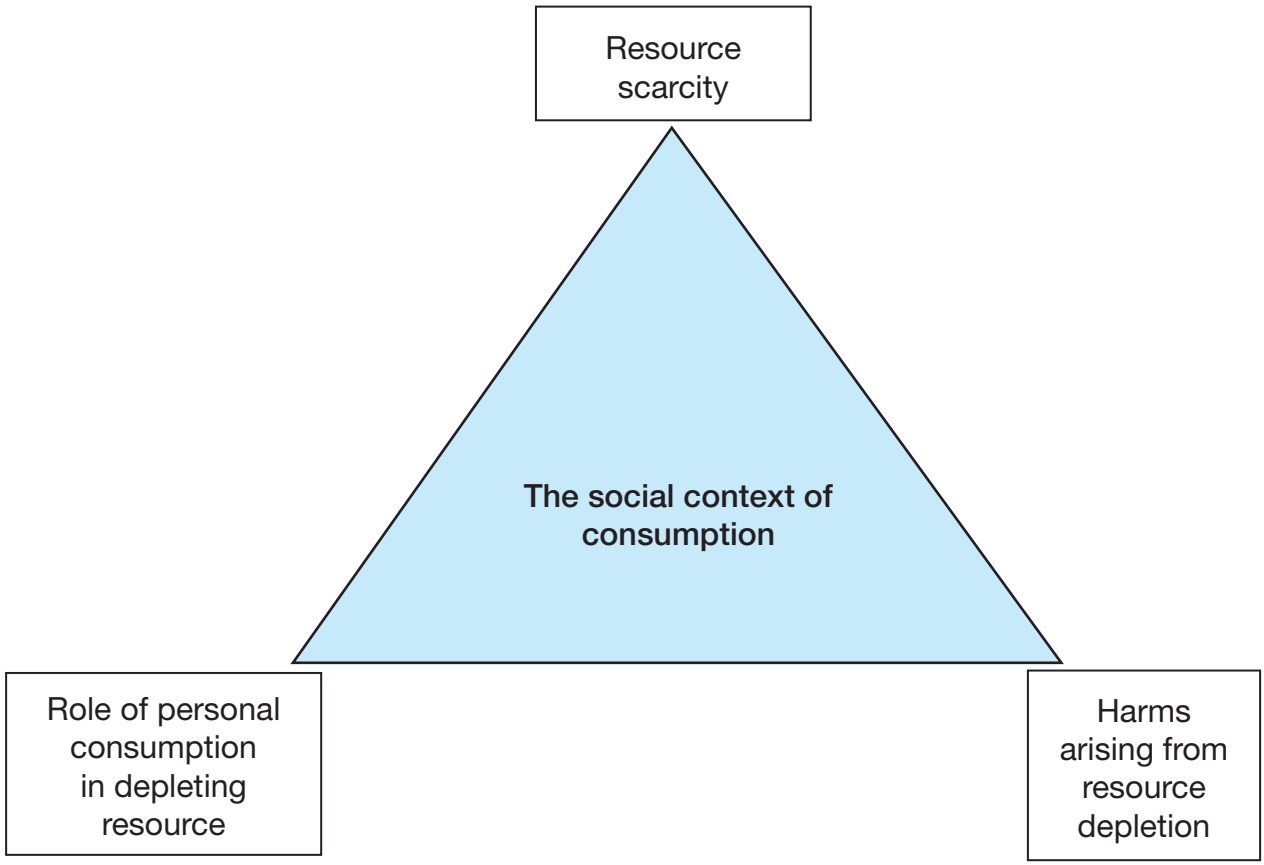
- acceptance of personal responsibility for depleting the resource;
- acceptance that depleting the resource causes harm.

Each of these bits of information is a piece of a jigsaw that, when fitted together, can enable participants to look at the issue of sustainable consumption in a way that might trigger fairness instincts. Figure 1 illustrates how these factors fit together, forming the 'consumption triangle' – the information needed for people to look at consumption as a co-operation dilemma. In the focus groups we explored whether people actually view sustainable consumption in this way by presenting them with the relevant information about the earth's climate system, household emissions and climate change, and exploring their responses through a variety of questions and exercises.

The evidence reviewed so far suggests that exploring whether people can look at sustainable consumption and climate change in terms of fairness requires a departure from the standard 'individualised' frame for engaging people about their behaviour that is often seen in commercial settings. It requires instead participants to be situated in a social context where they consider not only their own behaviour but also that of others, and where they think about their own behaviour and that of others in relation to the community as a whole.

As we have seen, people's views about fairness often emerge from judgements about other people's behaviour, and their sense of obligation is often closely linked to their understanding of what others are doing or are required to do. This perspective is therefore important for exploring whether people can look at sustainable consumption and climate change in terms of fairness.

Figure 1: The consumption triangle



For this reason, the approach taken in the focus groups was not one of asking participants about their own behaviour but rather placing them in the role of 'decision-maker', where we gave them information about patterns of behaviour across society and asked them what they thought should happen. This enabled them to think about their own behaviour and that of others too, and to make judgements about behaviour in the context of society as a whole.

As part of this frame for deliberation, we also asked participants what they thought should be done about unsustainable consumption – ranging from voluntary efforts to change personal behaviour to government policies. This is of interest in its own right. However, asking participants to contemplate action and policy on sustainable consumption was also an effective way of placing their own and others' behaviour in a collective context, and evaluating it in these terms. For example, exploring participants' views on voluntarism and compulsion in policy was a good way to probe their underlying views about the fairness of different patterns of consumption across society.[30]

What are the potential barriers to thinking of sustainable consumption and climate change in the same way as more standard co-operation dilemmas?

If participants cannot look at sustainable consumption and climate change in the same way as other co-operation dilemmas, we wish to explore the barriers to this. In what ways should we expect the psychology of co-operation to be different in the context of climate change?

The theoretical analysis and observations so far in this chapter have suggested some important possible differences between climate change and other co-operation dilemmas. These differences could have implications for the extent to which the problem of climate change can engage pro-social motives sufficiently strongly to generate widespread co-operative behaviour and disapproval of free-riding.

The list that follows highlights some of these differences, though it is not intended to be comprehensive.

The concept of the resource is complex

In this context, the resource that is scarce, the earth's absorptive capacity consistent with avoiding dangerous climate change, is a complex and abstract concept, and the link between human behaviour and the depletion of this resource is indirect. The depletion of absorptive capacity is a by-product of consumption rather than the objective of consumption. Similarly, we wish to maintain this resource because of the climate and environmental phenomena it underpins, rather than as an end in itself.

The link between the depletion of this resource and the resulting environmental harms is also complex

This link is also complex: the most severe impacts of dangerous climate change would evolve over long timescales and large elements of risk and uncertainty are involved in predicting them. The fact that the most serious environmental harms are so temporally distant and hard to predict may, in turn, weaken the extent to which the prospect of these harms plays a role in participants' reasoning about climate change and fairness.

Both of these issues relate to the way in which people understand and react to information about climate change and its impacts. One key objective of the focus groups is therefore to present people with information about these issues and see how they respond.

The intergenerational dimension of climate change

Even where people can understand and contemplate the impacts of dangerous climate change, the most severe impacts would span many generations, which may well affect the extent to which participants can view this issue in terms of fairness within a community. There are deep questions here about the strength of our obligations to future generations.

The international dimension of climate change

The international dimension of climate change may be another factor that undermines people's ability to view this issue in terms of a community co-operating to maintain the benefits of a public good. In particular, there is a mismatch between the geographical areas over which collective action can currently be co-ordinated and enforced (individual nations), and the areas over which the effects of dangerous climate change will be felt (which are global). Given evidence showing the importance of enforcement for sustaining co-operation, the difficulty of enforcing collective action across national boundaries may make it impossible to tap into the same kind of fairness instincts that we have seen in other areas.[31]

These two issues are fundamental. They relate both to ways in which the problem of climate change is difficult to comprehend and engage with, and to the fact that the nature of the problem makes it difficult to view it in straightforward fairness terms as would be the case for many other co-operation dilemmas involving common-pool resources.

As discussed earlier, free-riding in the consumption of rival goods like common-pool resources causes harm from the depletion of the resource (in this context, the impacts of dangerous climate change) or means that others have to reduce their consumption in order to compensate. For the first of these harms to motivate a willingness to co-operate, the discussion above suggests it would be necessary to sustain a sense of obligation and fairness across a very wide notion of community which lacks a reliable enforcement mechanism for compliance. By contrast, the second of these harms can be defined in relation to a national community and doing so effectively 'collapses' the problem of sustainable consumption and climate change into a contemporary co-operation dilemma within a domestic community. Thinking about this type of harm may therefore be much more effective in generating a sense of obligation and fairness in the context of climate change, perhaps sufficient to motivate a willingness to co-operate.

Accordingly, another key objective of our deliberative research was to explore the extent to which views about fairness are grounded in a reaction to the potential harms of dangerous climate change or relative inequalities in consumption within a contemporary society, and whether the latter is a more powerful frame. For this reason, the focus group exercises explored the challenge of tackling climate change as an international and intergenerational dilemma and also as a contemporary dilemma within UK society.

Beyond these underlying points are some practical issues that may also limit the extent to which sustainable consumption can engage people's sense of fairness.

The personal costs of behaviour change

Factors such as the temporal distance of the impacts of climate change and the difficulties of enforcement across national boundaries may be especially potent in reducing willingness to co-operate if people also perceive the personal costs of behaviour change to be high.

The importance of others' behaviour

Perceptions of how many people are already co-operating, or are prepared to co-operate, may also play an important role. Believing that not enough people will co-operate in order to prevent dangerous climate change – and therefore that the endeavour cannot ultimately be successful – may well reduce willingness to co-operate. Similarly, believing that many people will choose not to co-operate, and will 'get away' without doing their bit, may also reduce willingness to co-operate.

In summary, there are several potential barriers to people's ability to look at the problem of sustainable consumption and climate change in terms of fairness – that is, to look at it in the same way as they approach fairness in other standard co-operation dilemmas. A key aim of the deliberative research was to monitor the extent to which these issues affected participants' views in practice.

Specific areas of investigation for the deliberative research

Our focus groups were partly intended to be exploratory – presenting participants with information about climate change and about policies to tackle household emissions, and reporting on how they responded and what themes developed during the discussions.

However, the groups were also intended to investigate some of the issues set out above. To summarise, these included:

- the extent to which people can look at climate change and sustainable consumption in terms of fairness, and the extent to which this provides the basis for normative judgements about consumption;

- the basis of these views about fairness (concern about harms, concern about inequalities in consumption, concern about disrespect, and so on);

- the types of information that are necessary for people to look at the issue in this way, and the barriers that prevent them from doing so;

- the extent to which looking at climate change and sustainable consumption in terms of fairness can motivate support for behaviour change to reduce CO_2 emissions;

- what people think is fair in actions to reduce household CO_2 emissions, and how this relates to their views (if any) about fairness in consumption.

Chapter 2 describes the approach taken to the focus groups, including some of the exercises used. Chapter 3 reports on focus group attitudes to climate change and household emissions, exploring the extent to which participants were sensitive to the fairness issues involved, their preparedness to make normative judgements about behaviour, and the basis of their views about fairness.

Chapter 4 reports what participants thought would be a fair approach to reducing emissions, including what they thought would be a fair distribution of burdens and what policy approaches they supported – again, scrutinising the basis of these fairness judgements. Finally, Chapter 5 examines how participants' attitudes changed during the course of the groups, including their attitudes to climate change, environmental policy and personal behaviour change.

Summary of key points

- The earth's absorptive capacity for CO_2, including the remaining headroom between the current atmospheric concentration of CO_2 and the concentration that will precipitate dangerous climate change, is limited (for a given period of time, assuming fixed sink capacity). It can be thought of as a common-pool resource – a public good that is non-excludable (everyone can use it) but rival (one person's consumption of it reduces the amount available for others to use).

- Important fairness issues arise in the consumption of common-pool resources, including questions of co-operation and free-riding (who is co-operating to maintain the resource?) and also questions of distributive justice (how much of the resource should everyone consume?). These fairness issues are grounded in the importance of resource consumption for human welfare, on the one hand, and the harms resulting from a failure to co-operate in maintaining the resource, on the other.

- Attitudinal and behavioural evidence suggests that a substantial proportion of the population is predisposed to co-operate in the provision or maintenance of public goods, including in environmental contexts, and that such co-operation is often driven by views about fairness (especially reciprocity).

- Our deliberative research investigates the extent to which people can look at climate change and sustainable consumption in terms of fairness, and what this implies for the action they think should be taken to reduce CO_2 emissions.

2 The focus groups

This chapter describes the approach taken to the focus groups and illustrates some of the stimulus material used. It also analyses our participants in terms of their environmental attitudes and behaviours.

The focus groups consisted of several discussion exercises. Generally speaking, the approach we used did not ask participants to reflect on their own environmental behaviour, although participants sometimes volunteered this information or used their own behaviour to exemplify their points. Rather, we wanted to put participants in the role of decision-maker, giving them the relevant information, explaining the trade-offs and asking them what they thought should happen across society.

All participants readily took to this approach. Most found the information and the verbal explanations simple to understand and were engaged by the topic itself (with many asking where they could find further information). Participants seemed to enjoy being placed in the role of decision-maker and were comfortable with the judgements they were asked to make.

It is worth asking how far one can generalise the views expressed by participants when they are put in a decision-making role. In particular, it is important to consider whether participants conceived the judgements they were making as potentially applying to themselves. This is explored later in the analysis.

A further question, which cannot be answered here, is the extent to which the attitudes expressed in the groups, and the changes in attitudes evident throughout the groups, might relate to and influence personal behaviours. There is no way of testing behaviour through focus groups; however, later on we note some encouraging signs regarding participants' attitudes to their own behaviour.

Focus group participants

The deliberative research comprised eight three-hour focus groups with eight participants each. These were undertaken between November 2010 and February 2011 in six locations around the UK (Barnet, Cockermouth, Coventry, Glasgow, Llanelli and central London). Participants were aged between 18 and 70, split equally between male and female, and drawn from the full range of socio-economic groups (A, B, C1, C2, D and E), as well as from a broad range of political identification (though avoiding the political extremes). The series of groups included one group specifically with older participants (60–70 years) and one specifically with younger participants (18–25 years).

We were also keen to avoid participants representing the extremes of opinion on environmental issues, both hardened climate sceptics and committed green activists. Rather, we wished to work with the large majority of the population in between. (Polls in recent years have shown that around 10–20 per cent of the population currently doubt the existence of climate change or believe it does not pose a threat.)[32]

Why did we take this step? First, the aim of the project was to explore how different ways of framing the problems of climate change and sustainable consumption can influence public support for behaviour change and sustainability policies. So we wished to work with participants who did not reject outright the basic fact of climate change. The task of convincing people about the science of climate change is important, of course, but our project objective is not relevant to the population of hardened climate sceptics.[33]

Second, because we wished to explore how different ways of presenting the problem of sustainable consumption could build support for action more successfully than at present, we were

interested to work with those who currently resist the idea of changing their behaviour or who do not support policies that require behaviour change, rather than those who are already strongly committed to sustainable consumption.

To filter out hardened climate sceptics, we used two statements from Defra's survey of attitudes to the environment (Defra, 2007) and strong agreement with these statements was taken to indicate climate scepticism.[34] The questions were asked twice, once at the recruitment stage and once just before the groups:

- The so-called 'environmental crisis' facing humanity has been greatly exaggerated.
- The effects of climate change are too far in the future to really worry me.

To filter out committed green activists, we used two further statements from Defra's survey. Again, the questions were asked twice, once at the recruitment stage and once just before the groups:

- I would be prepared to pay more for environmentally friendly products.
- Any changes I make to help the environment need to fit in with my lifestyle.

As a result of the screening process, we ensured that no participant strongly agreed with the first statement and no participant strongly disagreed with the second statement.[35] As an additional step, we screened out members of pro-environmental non-governmental organisations (for example, Greenpeace or Friends of the Earth).

Analysis of participants

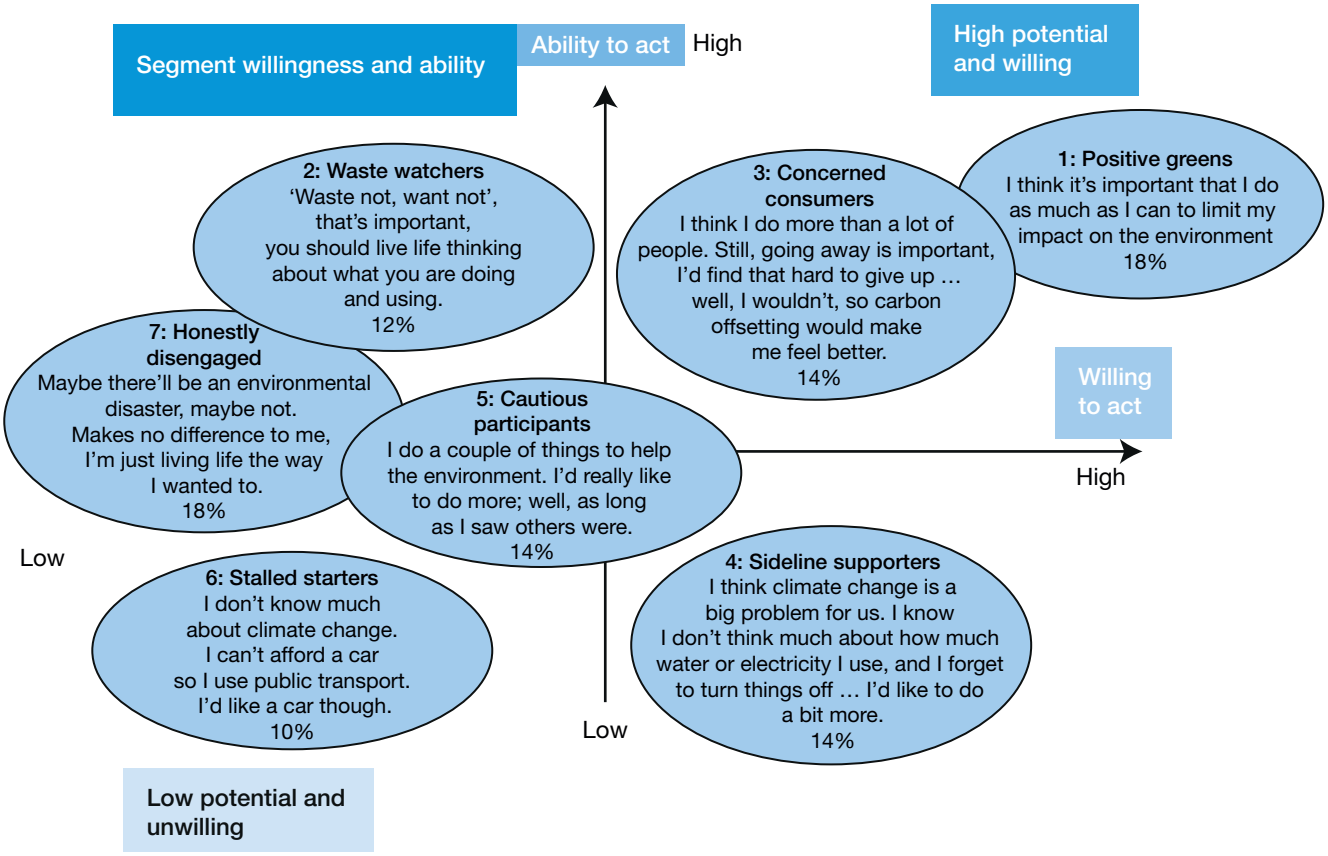
Once we had recruited our participants, we wanted to understand better the composition of our groups and to develop an approach to enable us to analyse how participants' environmental attitudes changed during the discussions. For this purpose we used Defra's environmental framework (Defra, 2008a) along with the associated segmentation methodology.

Defra's framework splits the UK population into seven segments on the basis of their responses to a survey of attitudes and behaviours: Positive Greens, Waste Watchers, Concerned Consumers, Sideline Supporters, Cautious Participants, Stalled Starters and Honestly Disengaged. Each segment denotes a distinct set of attitudes and beliefs towards environmental issues and behaviours. Appendix I contains a more detailed description of each.

In terms of behaviour change, Defra has analysed these seven segments in terms of their 'willingness to act' and 'ability to act', as shown in Figure 2. Each segment is illustrated with a quote designed to represent a typical viewpoint. The chart also gives the proportion of the UK population falling into each segment in 2008.

Using a 'combined block method' developed by Defra for its segmentation technique, we analysed our participants into these seven segments.[36] Table 1 shows the proportion of our participants in each segment compared with that among the population as a whole.

Figure 2: Defra's seven segments according to their ability and willingness to act



Source: Defra

Table 1: Proportion of people in each Defra segment (before the focus groups) and Defra's estimate for the UK population (2008)

Segment	Proportion of focus group participants in each segment	Share of UK population in each segment
Positive Green	8%	18%
Waste Watcher	8%	12%
Concerned Consumer	13%	14%
Sideline Supporter	24%	14%
Cautious Participant	19%	14%
Stalled Starter	11%	10%
Honestly Disengaged	17%	18%
Total	**100%**	**100%**

As the table shows, the consequence of our recruitment strategy was that our group of participants was weighted slightly more towards the less 'environmentally friendly' end of the spectrum. That is, we had far fewer Positive Greens than the population as a whole, and there were more participants in the segments where individuals tend to be more resistant to behaviour change such as Sideline Supporters and Cautious Participants. (This presumably reflected the 'filtering out' of green activists and those already strongly committed to behaviour change.) By contrast, the questions that filtered out hardened climate sceptics did not result in a smaller proportion of participants in the least 'environmentally friendly' categories. That is, we had a similar proportion of Honestly Disengaged and Stalled Starters to the population as a whole. Our filtering simply ensured that participants in these categories were there because they were resistant to behaviour change, rather than because they were climate sceptics.

Stimulus material

Groups began with discussions to gauge participants' awareness of climate change and their views about it. One of the first exercises then presented participants with information about the basic science of climate change and gave them an opportunity to discuss it. This included basic descriptions of the greenhouse effect, the carbon cycle, the build-up of CO_2 in the atmosphere and global warming. Figure 3 shows examples of the type of slides used.

Participants were also introduced to the concept of dangerous climate change, defined here as warming in excess of 2°C (Schellnhuber, 2006).[37] They were also given estimates of the atmospheric CO_2 concentration that might give rise to warming in excess of 2°C, with the central estimate discussed being either 450 ppmv or 450–500 ppmv (compared with a concentration of 390 ppmv today and 280 ppmv in the pre-industrial era).[38] This effectively conveyed a notion of environmental scarcity – namely, limits in the earth's capacity to absorb CO_2 while avoiding dangerous climate change. Specifically, we wished to convey the idea that, if the earth's capacity to absorb CO_2 remains constant, there is a limited amount of CO_2 we can emit if we are to avoid dangerous climate change.

Participants were also given some examples of possible harmful impacts of dangerous climate change, including both direct environmental impacts (sea-level rise and more extreme weather events, such as flooding, violent storms, droughts and heatwaves) and knock-on social and economic impacts (such as food shortages, infrastructure damage and population displacement).[39] This is illustrated in the next chapter.

In addition, participants were given a range of information about personal and household CO_2 emissions, allowing them to link information about the causes and impacts of climate change to their own lives and behaviour, and to those of society around them. This included examples of the amount of CO_2 emissions from everyday activities (see Table 2). It also included a graph of how household CO_2 emissions increase on average with household income, so participants could see the wide variation in annual emissions across UK households (Thumin, forthcoming).

Another exercise presented participants with a range of fictional characters, describing both their lifestyles and their carbon emissions. This allowed participants to discuss and evaluate behaviours, as well as giving them a reference point for talking about behaviour change and sustainability policy. Most of the focus groups used just three characters – a high-income individual (Jeff) with high emissions; a middle-income individual (Vera) with emissions that were slightly above the UK household average; and a low-income individual (William) with emissions slightly below the UK average (see Figure 4).

Various further exercises were used to discuss possible policy approaches to reducing household emissions. One described how a system of personal carbon allowances (PCAs) could work and gauged participants' responses to this and similar ideas. There were also more general policy exercises, allowing participants to discuss the relative merits of different types of policy approach (voluntary, economic, regulatory, and so on). Further details are provided in later chapters.

Summary of key points

- The general approach was to place participants in the role of decision-maker, providing them with the relevant information and asking them what they thought should happen.

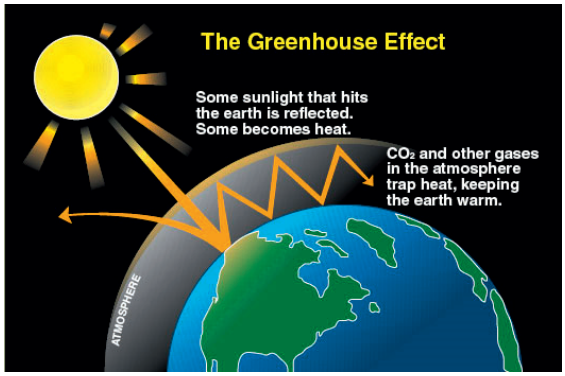
- Participants were drawn from the full range of age groups and socio-economic categories and the focus groups were held at a variety of locations around the UK. We filtered out both hardened climate sceptics and committed green activists to ensure we were working with those groups of people most relevant to the project objectives.

- Post-hoc analysis of our participants shows they were weighted slightly more towards the less 'environmentally friendly' end of the spectrum than the UK population as a whole, while avoiding hardened climate sceptics.

Figure 3: Examples of focus group information on basic science of climate change

The Greenhouse Effect

- When the sun's energy reaches the earth, some of it is reflected back into space. The rest is trapped by *greenhouse gases* in the atmosphere, warming the earth's surface
- This is called the *greenhouse effect*
- The higher the concentration of greenhouse gases in the atmosphere, the stronger the greenhouse effect – and the hotter the earth becomes

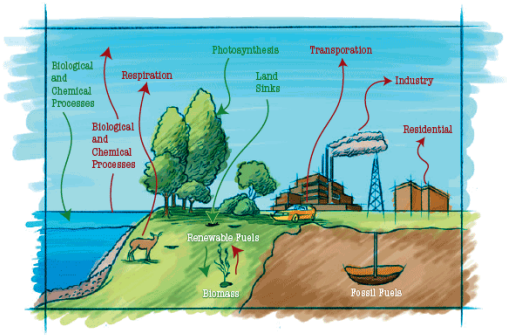


- Greenhouse gases are gases like carbon dioxide and methane
- *Carbon dioxide* (CO_2) is the greenhouse gas most responsible for the greenhouse effect – so we'll generally talk about that today

Carbon Dioxide (CO_2) Emissions

- CO_2 occurs both naturally and also as a product of human activity
  - CO_2 is emitted naturally from animals & plants (when they breathe), and from oceans
  - CO_2 is also absorbed naturally by plants (photosynthesis) and oceans. Together, these form the natural carbon 'cycle'
- CO_2 emissions from human behaviour are mostly from burning fossil fuels for energy – whether for electricity, heat, or transport. CO_2 emissions also arise from some industrial processes (like making cement)

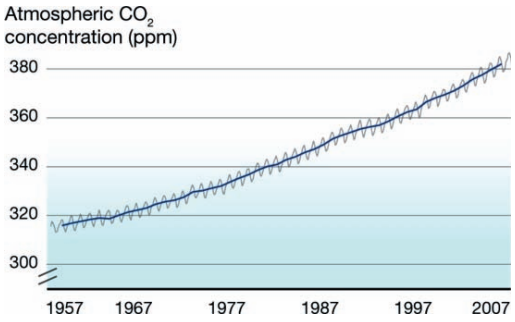
Global Carbon Cycle



- CO_2 is emitted into the atmosphere, and remains there until it is re-absorbed by plants & the oceans
- You can think of the atmosphere as a giant 'holding bay' for CO_2, where it remains until it is eventually re-absorbed

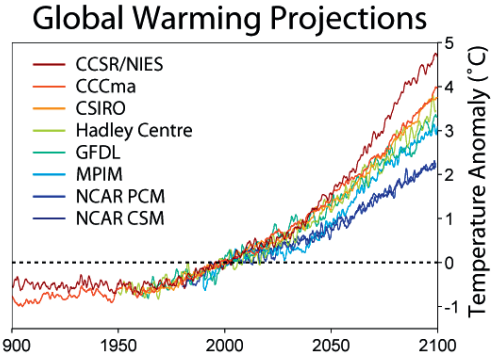
The Build-up of CO_2 in the Atmosphere

- The earth's plants and oceans can only remove carbon dioxide from the atmosphere at a certain rate
- This means that if large volumes of CO_2 are emitted into the atmosphere, faster than the earth can re-absorb it, the concentration of CO_2 in the atmosphere will increase
- Before the industrial era (18th Century), the same quantity of CO_2 was emitted into the atmosphere as was re-absorbed – as part of the natural cycle
- This meant that for thousands of years the concentration of CO_2 in the atmosphere remained constant (at 280 million parts per million), and the earth's temperature remained relatively steady
- Since the industrial era, human activity has released increasing amounts of CO_2 into the atmosphere
- As a result, the concentration of CO_2 in the atmosphere has been rising (currently 390 parts per million), and so the earth's temperature has been increasing



Global Warming

- The higher the concentration of carbon dioxide in the atmosphere, the stronger the greenhouse effect – and the hotter the earth becomes
- If severe enough, the greenhouse effect would bring about temperature rises that could cause dangerous climate change – where the environmental effects are potentially very serious
- Many scientists think that avoiding dangerous climate change means limiting future temperature rises to 2°C



- In the 20th Century the earth's temperature rose by about 1°C
- According to scientific predictions, in the 21st Century, the earth's temperature could rise further by between 1°C and 6°C

Figure 4: Examples of characters discussed in group exercises

Jeff

Single, age 32. Lives in a large apartment. Has lots of gadgets. Drives a 4x4. Takes lots of holidays. Loves adrenaline-fuelled leisure activities (like quad biking).

Annual CO_2 emissions **24,000 kg per year**

Vera

Single, age 45. Lives in a fairly large suburban maisonette. Uses car and public transport. Has one annual holiday abroad. Likes to buy new gadgets and clothes from time to time. Likes to watch TV.

Annual CO_2 emissions **12,000 kg per year**

William

Single, age 68. Lives in a flat in an urban centre. Doesn't drive; relies on public transport. Only holidays in the UK. Rarely buys new gadgets or clothes. Likes to read and go for walks.

Annual CO_2 emissions **6,000 kg per year**

3 Attitudes to climate change and carbon emissions

This chapter discusses participants' responses to the information they were given about climate change and carbon emissions, including the extent to which they were prepared to make normative judgements about household consumption and emissions.

Participants' responses to information about the impacts of dangerous climate change

Participants were given information about some of the major types of harmful impacts of climate change, including both direct environmental impacts and possible knock-on social and economic impacts. Figure 5 gives an example.[40]

Figure 5: Example of focus group information about impacts of climate change

Harmful Impacts of Dangerous Climate Change

- A temperature rise in excess of 2°C could cause dangerous climate change – with potentially very serious impacts
- These impacts include both direct environmental changes and also health, social and economic impacts that would follow from these environmental changes
- Significant rises in sea levels – depending on emissions, this could be in excess of a metre over the next century. This would lead to coastal flooding, threatening coastal populations in the UK and around the world
- More extreme weather events, particularly flooding, violent storms, droughts and heatwaves
  - Flooding and storms could cause significant damage to homes, threaten various species with extinction, and damage agriculture, leading to food shortages
  - Droughts could lead to water shortages, threaten various species with extinction, and damage agriculture, leading to food shortages
  - Heatwaves could increase heat-related illnesses and infectious diseases, along with the spread of disease-related insects like mosquitoes
- All of this could entail significant economic costs, as well as producing large numbers of refugees

Participants invariably viewed these impacts as very serious and very bad; common words were 'scary', 'horrendous', 'frightening', 'grim' and 'catastrophic'. All participants were concerned about sea-level rise, especially participants in coastal or recently flooded locations such as Llanelli, Cockermouth and Glasgow. The increased probability of the spread of infectious diseases was also commonly picked out as one of the most worrying potential impacts.

Despite this, many participants reported a feeling of 'detachment' when discussing information about the impacts of climate change. It all seemed a bit unreal to them and they found it hard to 'relate' to such impacts. Consequently, these potential impacts did not have much 'psychological force' when it came to discussing how to address climate change. Several factors lay behind these feelings of detachment, discussed below.

The large-scale nature of climate impacts

For some participants, the environmental and human impacts under discussion were 'just too big to imagine' or 'too much to accept', and this seemed to reduce people's ability to respond to them.

Female 1: I do think that sometimes when things are so big and so drastic we sort of pull back and switch off. It's almost too big for us to handle. We can't deal with it …
Male 1: It gets so horrendous that you think, 'Nah, that can't be right.' There's disbelief there.

Cockermouth

Temporal distance of the most severe impacts

Many participants demonstrated an awareness that climate change was already happening. In particular, some participants cited recent examples of extreme weather events – such as the recent flooding in Queensland, Australia – as examples of contemporary climate change impacts.

> *Most of everything you've got down here [the list of impacts] is actually happening now, maybe not quite as much as it will be further down the line, but I think that all of these situations are applicable right now.*
>
> Male, Barnet

But the temporal distance of the most severe impacts reduced participants' ability to imagine and respond to them in the same way as they would with contemporary harms.

> *I think it's worrying. I do think it's a worry, but … there's always that thing of, 'Oh, is it going to happen in my lifetime? So am I really bothered?'*
>
> Female, Coventry

> *I think a lot of people think 'little them' is pretty irrelevant and their efforts are irrelevant. It's because it's so far in the future.*
>
> Female, Cockermouth

Younger participants clearly found it easier to relate to these potential climate impacts. Unsurprisingly, most of the younger participants clearly thought about the impacts in relation to themselves, whereas the older participants mostly thought about the impacts in terms of their children and grandchildren.

Abstract nature of the impacts, and the complex causality involved

Most participants intuitively thought about the impacts of climate change in terms of one-off, dramatic weather events. But they struggled to think about causality when it came to large-scale environmental processes and found it hard to imagine how such weather events could be related to the underlying process of climate change. As one participant put it, it was much easier to 'blame something nearer'.

Female 1: We've been flooded in Cockermouth in two separate instances, but somehow or other you don't directly relate it to global warming, you relate it to, erm, badly dredged rivers and things like that … err, drains that are blocked. You almost expect your council or the government to sort it out because you

feel it must be more than rising temperatures. It does get very hard to get your head around. One minute we're struggling with a drought and the next minute we've got too much water to know what to do with and the same thing is causing it? You just can't get your head round it. It's so much easier to blame the council for not dredging the rivers or the drains being full of leaves, or whatever. People blame something that they feel something can be done about. You'll blame something nearer first …
Male 1: Climate change is this huge thing. It's just something you hear on the telly, whereas not having the drain cleared is something you can see outside your front door …
Female 1: Everything that goes wrong in your life, you look to blame someone. When things go wrong you look to apportion responsibility onto somebody else. And it's a lot easier to apportion blame onto the council or government than it is to apportion it up to a cloud in the sky.

Cockermouth

Uncertainty about the impacts

Projected climate impacts are based on assumptions and involve an element of probability. Several participants indicated that this made it difficult for them to know how to think about these impacts in reasoning what to do. For some participants, this affected the extent to which they were prepared to accept action to tackle climate change, though most participants intuitively thought a precautionary approach should be taken.

> *It's built on a series of hypotheses … You do not legislate on such flimsy grounds.*
>
> Male, Barnet

Support for action to prevent climate change

Despite the difficulties participants had in imagining and thinking about severe climate impacts, discussing these impacts led, for nearly all of them, to a very strong sense that action must be taken to try to prevent dangerous climate change ('we need to change' and 'we have to stop this' were common refrains).[41]

> *I'm terrified for my grandchildren … I feel really strongly that we have to get this right now.*
>
> Female, Glasgow

These sentiments were expressed particularly strongly after participants were presented with information about the limited remaining headroom between the current concentration of greenhouse gases in the atmosphere and the concentrations that could precipitate dangerous climate change.

> *We haven't got much of a threshold left have we? We haven't got a lot to play with to be honest so I think action needs to be taken …*
>
> Male, Coventry

A recurring theme in these discussions was a sense of generational responsibility. Some participants highlighted the fact that this current generation bears a special responsibility for tackling climate change – which seemed unfair to them, given past inaction.

> *It's like the government has left it too late again like they always do with everything. My generation now, it's as if we feel like we're getting blamed and this has been happening [for] hundreds of years but now it's getting to this point, everyone's suffering …*
>
> Male, Coventry

One participant even likened the action that needs to be taken to reduce greenhouse gas emissions to the current public spending cuts.

There has to be some dramatic change, though. It's like at the moment the government are trying to save money because of all the spending we've done over the last twenty to thirty years. We've done exactly the same with the environment … we've built up debt and now we've got to cut back.

Male, Coventry

Participants' reactions to information about personal carbon emissions

Participants were given information about the CO_2 emissions associated with particular behaviours. Since most people naturally thought about emissions in terms of the direct combustion of fuel (typically visualised in terms of exhaust coming out of a vehicle or smoke from a power station chimney), they were especially surprised by the emissions from everyday behaviours that used electricity, and also by the emissions embedded in the production of particular goods. Table 2 gives some examples of emissions from energy use.

This information gave participants the ability to link the causes and impacts of climate change to their own behaviour, and to that of society around them, leading them to reflect on the difficult trade-offs involved.

Table 2: Emissions from energy use

Activity	Kilograms of CO_2 (or equivalent) emitted
1 hour TV on a 15-inch flat screen	0.03
1 km by Tube	0.06
Boiling a litre of water in an electric kettle	0.07
1 km by bus	0.08
1 km by diesel car	0.18
1 hour TV on a 42-inch plasma screen	0.22
6 minutes in a typical electric shower	0.50
Machine-washing a load of laundry at 30ºC and drying on the line	0.60
15 minutes in an electric power shower	1.70
Machine-washing a load of laundry at 60ºC and drying in a combined washer-drier	3.30
10 miles by car in heavy traffic	22
1 year using a mobile phone, with calls averaging 2 minutes per day	47
London to Glasgow and back in a small efficient car	330
Leaving an old-fashioned light bulb on for 1 year	500
London to Hong Kong return flight	4,600
Producing a top-of-the-range Land Rover	35,000

Source: Berners-Lee, 2010

Most participants openly said that they had aspirations to consume more, and all participants viewed improvements in living standards as a positive thing to be welcomed. For some participants, this meant solutions to tackling climate change lay primarily in cleaner sources of energy, and they were resistant to the idea of changing behaviour. However, most participants seemed to recognise and accept that personal behaviour might have to change too.

Male 1: If you can do it [tackle climate change] without changing your lifestyle, you'll be happy to go along with it.
Female 1: But you have to change your lifestyle … Everyone has to change it to some degree.

Central London

Discussing emissions associated with everyday behaviours caused participants to reflect on their own lives in a different way and occasionally drew out feelings of guilt. For some it was obviously quite uncomfortable connecting their own behaviour with potential harmful environmental impacts.

Male 1: But I want all these things … If I had £60,000 I would build a big house and have a plasma TV in every room.
Male 2: And would you be able to sleep at night?
Male 1: That's the feeling I get it with it, though. I feel selfish about it, when I say it that way …

Cockermouth

A variety of 'coping strategies' was strongly in evidence during these exercises, including a tendency to project blame onto others – primarily industry and government.

Of course, there are very important and legitimate issues about emissions from industry and government estates (discussed at length in some of the groups). But these issues tended to be raised in this context as a way of deflecting attention from personal emissions and avoiding confronting the impacts of personal behaviour. This was so obvious at times that participants recognised it and began to challenge each other.

Female 1: It's the shops that get so much wrong. They have heaters blasting out and the doors wide open.
Female 2: Look, just because the shops have their heating blaring out, it doesn't mean I should get home and put my stand-by lights on.

Barnet

Male 1: For ten hours a day I'm not generating CO_2. For ten hours a day I'm at work. That's industrial CO_2.
Female 1: Rubbish. Do you turn your computer off every night? Because I know people in my office that don't and it really bugs me.
Male 1: That's part of the industrial CO_2.
Male 2: Yeah, but shouldn't it be your responsibility to do it?

Central London

Reflections on the state of society

Being given information on household emissions and their potential environmental impacts also led to some broader reflections on the state of society. Common themes were that we had become 'too materialistic' and that there was 'social pressure' to consume.

> *I don't know necessarily whether climate change is solely due to human beings, but I do feel that human society – and our society in particular – uses resources much too much and we're sucking up resources at far too great an extent, so there's got to be a connection …*
>
> Female, Cockermouth

Another common theme was that society had become 'selfish' and that people were too indifferent to the greater good.

> *I think this is one of those subjects where people have that 'I'm alright Jack' attitude: 'I like my lifestyle, I don't wanna change, but I want everyone else to do it for me so I don't have to do anything.'*
>
> Male, central London

And at times this led to open pessimism about the prospects for behaviour change.

> *I just think at the heart of it everyone's pretty self-centred when it comes down to things, so that even though in a general sense it would be nice for us all to pull together, in reality … we still won't do anything about it.*
>
> Male, central London

Perceived generational differences in values and behaviour

Another common theme in the discussions was how attitudes to consumption have changed over time. There was a strong sense that society had lost important values and practices of thrift. Rationing after the Second World War and the culture of 'make do and mend' were raised spontaneously in nearly every group. Here, the issue was often framed by participants as being about how children are brought up: today's 'younger generation' were viewed as more materialistic and more wasteful.

Male 1: Our parents' generation or certainly my parents' generation went through the wars and they lived with austerity for a very long time. Our generation and certainly my children's generation haven't, so they're less inclined to make do and mend – they'll just go and buy something else. We're victims of our own prosperity …
Male 2: We've got a throwaway culture.

Cockermouth

These generational differences were felt especially strongly in the group of 'older participants' (60- to 70-year-olds) who sometimes expressed frustrations over what they perceived to be young people's 'lack of responsibility'.

Female 1: I turn the light off when I leave the room, and I shout at my kids who don't turn the light off. When I was brought up you ate everything on your plate and, you know, you tell your kids off for leaving stuff because they always tend to leave one or two mouthfuls. I think a lot of these things are generation things.
Female 2: I blame sell-by dates. If it's one day over my son chucks it out.

Barnet

Normative judgements about consumption and emissions

'Necessary' and 'unnecessary' emissions

When discussing emissions, participants openly drew distinctions between 'necessary' and 'luxury' behaviours, or between 'necessary' and 'wasteful' behaviours. Many participants associated luxury and wastefulness with 'excessive' or 'frivolous' consumption, with consuming 'too much' or 'more than you should'.

In one exercise participants were shown a graph illustrating how household emissions tend to increase, on average, with household income.

Moderator: The graph shows people on higher incomes tend to emit more CO_2 than those on lower incomes. What do you think about that?
Female 1: I'd say that was true. They tend to have bigger homes, fancier cars, more overseas flights, it's just their lifestyle …
Male 1: They're probably a lot more frivolous as well.
Moderator: What do you mean by frivolous?
Male 2: Taking a car to buy a newspaper.
Male 1: Yeah, things like that. Even I'm probably quite wary of leaving lights on in the house because I wanna save on electricity bills, but if I'm on £200,000 a year it wouldn't be on my mind so much …
Female 2: I think you're right. I think it's cost-driven. I think if you've got excessive amounts [of income] you tend to not be so wary about leaving your light on because your running costs aren't as important.

Central London

The fact that (on average) emissions increase with income was seen as obvious and unsurprising. The dominant view about household behaviour was essentially that 'it comes down to money' and many participants suggested that the absence of income pressures on high-income households meant they did not really think about their consumption decisions and behaviour.

> *If you've got enough money to buy a Rolls-Royce, you don't worry about how much fuel you put in …*
>
> Male, Coventry

The availability of alternatives was central to participants' view of whether behaviours (and emissions) were seen as necessary or unnecessary. For example, activities such as long-haul flights were generally seen as necessary for travel as there were no possible alternatives. By contrast, the use of 4x4s in urban environments was one of the things frequently described as 'unnecessary'.

Male 1: One thing that does do my head in is you see a lot of people driving 4x4s but they never take them off road. A 4x4 is designed to go off road.
Female 1: That really annoys me.
Male 1: It's a status symbol, isn't it?
Female 1: If you have a purpose for them then fair enough.
Male 1: Like farmers and that, they have a purpose for them as they do off-road driving but when you have got someone living in an urban area who is never off the road, then why do you need it?

Llanelli

What is wrong with high household emissions?

To what extent did participants see high household CO_2 emissions, or significant inequalities in household emissions, as a problem? At various points during the discussions, a clear majority of participants seemed comfortable using words such as 'fair' and 'unfair' or 'right' and 'wrong' to describe high energy use or emissions, and many did so spontaneously. But other participants balked at looking at the issue in such terms. It is interesting to note the contexts in which such sentiments were most readily employed and the kinds of information that triggered them.

All participants saw high household emissions as a problem when the behaviour in question was deemed 'wasteful' – provided the person was aware of the environmental damage of CO_2 emissions.[42]

Moderator: I'm interested in this idea you mentioned of 'frivolous behaviours'. Do you think it's a problem if people are doing 'frivolous' things and they're emitting carbon dioxide?
Female 1: Yes, it's unnecessary waste.
Male 1: I've never consciously thought it was a problem, because it isn't something I consciously think about, but it probably is …
Moderator: Do you actually feel it's *wrong* to use an excessive amount of energy on activities if they are 'frivolous'?
Male 2: I do yes.
Female 2: I do too, but not everyone is going to think like I do.
Moderator: Does anyone disagree?
Male 1: I disagree because I think most people do it without realising.

Central London

Aside from behaviours deemed 'wasteful' or 'unnecessary', views about high household emissions were complex and depended on context. One way in which we explored this was by asking participants to respond to the graph showing household emissions increasing on average with household income (Thumin, forthcoming). Interestingly, responses depended on whether participants were shown the graph before or after the discussion of limits on the amount of CO_2 that can be emitted if we are to avoid dangerous climate change.

Those seeing the graph before encountering information on the limited headroom for CO_2 emissions tended to describe this variation in household emissions across the population as 'only natural', 'inevitable' and 'a fact of life', and resisted attempts to characterise the issue in terms of fairness.

Male 1: I don't think fairness comes into it. If you have the income available you will spend it.
Male 2: Life isn't very fair …

Cockermouth

However, in those groups where participants were shown the graph after encountering information on the limited headroom for CO_2 emissions, participants were much more willing to judge emissions in terms of fairness and 'right and wrong'.

> *I don't think it's right that people should be able to waste resources just cos they've got the money.*
>
> Female, Coventry

> *Surely you've got some sort of moral conscience to know that you are emitting so much CO_2? … Surely there's gotta be something that rings in your head that says 'this is a problem'?*
>
> Male, central London

So inequalities in household emissions (and the high average emissions of high-income households in particular) were only seen as a problem in the context of scarcity, that is after participants had seen and reflected on information about limitations in the earth's capacity to absorb CO_2. The contrast in reactions – between those who saw the graph before seeing this information and those who saw it afterwards – demonstrates the effect of information about scarcity on how people think about unequal use of resource consumption.

What specifically did participants think was unfair about high or unequal household emissions? For some, this was linked specifically to the environmental harms that would result from high emissions.

People who are on higher incomes and are polluting are acting socially irresponsibly.

Male, Glasgow

Others saw the unfairness in terms of the inequality of resource consumption – that households with high emissions were essentially free-riding on everyone else.

Moderator: Do you think it's a problem if some people are producing a lot of CO_2?
Male 1: I think it's a big problem, because it's unfair on those that don't or can't.

Central London

Long before the exercise discussing PCAs, some participants articulated the idea of a 'fair share' of emissions – prompted by the idea that there is a limited amount of CO_2 we can emit if we are to avoid dangerous climate change – which then became the basis of describing high emissions as 'unfair'.

If you give everybody ten pounds' worth [of emissions] each, or whatever, and it's up to them how they use it, that's better than me going off and using everybody else's ten pounds' worth just because I'm rich and I can afford to. It isn't fair – just because I'm rich and I can afford to, like, leave my telly on for a week – well, nicking your share of it doesn't seem fair.

Female, Coventry

It is worth pointing out that, in making such normative judgements, the language of 'responsibility' was used frequently, and resonated very strongly with all participants in the groups. To the extent that they viewed household emissions as open to moral evaluation, or viewed people as having obligations to change their behaviour, many participants naturally conceptualised and articulated this in the language of 'responsibility'.

People need to get some facts and see what is happening around them – not just see floods in the streets, think 'poor bugger' and then turn around and watch EastEnders – they need to realise the impact it's having and accept responsibility.

Male, Llanelli

While some participants were comfortable from the outset of the discussions using terms such as 'fair' and 'unfair' or 'right' and 'wrong' to describe household consumption, others initially avoided or rejected the use of such terms, preferring to say behaviour was 'responsible' or 'irresponsible' (even if it subsequently transpired that these terms contained exactly the same normative implications). For several participants, the idea of responsibility turned out to be a kind of 'gateway concept' into using stronger language of fairness and morality.

Moderator: She just used the word 'fair' … Give me your gut instinct: are words like 'fair' or 'unfair' appropriate when we talk about this sort of thing, or not?

Male 1: You could possibly use the expression 'socially responsible'. People who are on higher incomes and are polluting are acting socially irresponsibly and therefore in a sense being unfair to their fellow citizens. So 'fair' is, yeah, 'fair' is reasonable …

Glasgow

Finally, participants very often imputed attitudes to high emitters and expressed anger about these attitudes – especially in the context of the overall trend of emissions increasing with household income. Often high emitters were assumed not to care, and their behaviour was taken to be disrespectful.

It's a careless attitude, isn't it? They've got more money, so they don't care.

Male, Coventry

For some participants, this perceived 'disrespect' from high emitters was an important catalyst for supporting compulsion and regulation, rather than voluntary frameworks, for behaviour change. It also lay behind their rejection of tax approaches to behaviour change: participants were angry about perceived disrespect and did not see it as being offset simply by high emitters paying more. These issues are discussed further in the next chapter.

Summary of key points

- Discussing the potential impacts of climate change led to a strong sense that action must be taken to prevent dangerous climate change. Nevertheless, despite thinking the potential impacts were very bad and serious, participants reported a sense of detachment because the impacts were large-scale in nature, were temporally distant and involved complex causality and uncertainty.

- Illustrating the emissions associated with everyday behaviours enabled participants to link information about climate change to their own behaviour, occasionally drawing out feelings of guilt. Participants believed that society today had become too materialistic and had lost important values of thrift.

- Participants drew distinctions between 'necessary' and 'luxury' behaviours, and between 'necessary' and 'wasteful' behaviours.

- Participants were much more likely to see inequalities in household emissions or high household emissions as a problem after they had been given information on limitations in the earth's capacity to absorb CO_2 (that is, when they reflected on unequal consumption in the context of scarcity).

4 Attitudes to fairness in reducing household emissions

This chapter explores what participants thought was fair in reducing household emissions, including what they thought might be a fair distribution of burdens across households. It also looks at participants' attitudes to different types of policy approaches, including issues of voluntarism and compulsion, and economic versus regulatory approaches.

Where should the burden of reducing household emissions fall?

Where should the burden of reducing household CO_2 emissions fall? One way in which we explored this was to present participants with a range of hypothetical characters, along with information about their lifestyles, their spending and their emissions (illustrated in Figure 4, Chapter 2). Most of the focus groups used just three characters – a high-income individual (Jeff) with high emissions; a middle-income individual (Vera) with emissions that were slightly above the UK household average; and a low-income individual (William) with emissions slightly below the UK average. We then asked participants about these characters, including putting participants in the position of a 'decision-maker' and asking them what they thought a fair distribution of burdens would be in reducing the characters' CO_2 emissions.

Very quickly, participants arrived at the view that those with the greatest ability to reduce emissions should bear the greatest burdens, and those with less ability to reduce should bear less – a kind of 'carbon progressivity'.

Moderator: I'm asking what you'd prefer: 10 per cent off all of them or more off Jeff?
Female 1: You can't ask William to do 10 per cent because for all we know he lives a very frugal life anyway and maybe he'd end up in the cold or the dark or something. With Vera there's possibly a little bit of room for manoeuvre, but with Jeff there's obviously room for manoeuvre.

Barnet

Interestingly, the concept of ability to reduce emissions, and the idea of requiring larger proportionate in household emissions reductions from those with greater ability to reduce, was often likened to progressive taxes (which are levied in terms of ability to pay) or need-based benefits (which are sensitive to the needs of those on low incomes).

Moderator: Let's say the government said 'we're going to reduce our carbon emissions'. One option would be to cut all of their carbon emissions by the same proportion …
Female 1: That's not really fair, is it?
Female 2: It's a bit like tax isn't it? Do you tax the rich to pay for the poor?
Female 3: William's already using a lot less, so he might be able to reduce but not by the same proportion.
Female 1: Why should he anyway?
Female 3: He shouldn't have to reduce as much as Jeff should …
Female 2: You've got to try and make Jeff use less.

Barnet

No attempt was made in the discussions to formalise this concept of 'ability to reduce emissions'. Straightforwardly, participants saw those with the highest emissions as having the greatest ability to reduce, and those with the lowest emissions the least ability. Further relevant factors that emerged in the discussion were whether or not the activities responsible for emissions were necessities or luxuries (with the latter viewed as a more reasonable target for reductions) and whether or not lower carbon versions of the relevant goods or modes of consumption were available (with demands for emissions reductions appearing more reasonable if they were).

Beyond these points, the concept of ability to reduce emissions was nearly always bound up with household income too: those with higher incomes were seen to have a greater ability to reduce emissions.

> *If you tell the person on £60,000 to drop their emissions by 10 per cent, it wouldn't make that big a difference to them. But to the people on £9,000 it would almost finish them off.*
>
> Male, Cockermouth

This was partly because income and emissions were linked in our stimulus material, in which emissions rose with income for the three characters we presented to participants. (This in turn was designed to reflect the data participants had already seen – showing that, on average, household emissions increase with household income.) But it was also because the higher emissions of high-income households (including that of our high-emitting character, Jeff) were seen to come from 'luxury activities'.

This perceived link between household income and ability to reduce emissions also reflected the fact that participants saw high-income households as having greater capability to adjust their behaviour, whether switching to alternatives or investing in energy-saving measures.

> *People who are earning £5,000–£15,000 are more likely to have an older gas oven and not very efficient cars, whereas people who earn £60,000–£100,000, you know, can afford to spend, say, £10,000 on a new lighting system that turns stuff off when you're not in a room.*
>
> Male, central London

[*This group was presented with the statement: 'Everyone will benefit from preventing climate change, so we have a right to expect everyone to make a sacrifice by reducing their energy use.'*]
Male 1: I've got a semi-issue with that.
Moderator: Go on …
Male 1: Well, Joe Bloggs, bare benefits, how can he reduce his energy emissions when he's barely heating the house, with only just enough money to live on? How can he reduce his emissions?
Female 1: It's like everything in life in a way is means tested isn't it? So I guess in a way there would be certain people naturally excluded [from making sacrifices], I suppose …

Central London

Finally, in discussions focusing on the high emissions of high-income households, and in which some participants were critical of emissions from 'luxury' behaviours, there was a minority of participants who suggested that action to encourage high-income households to reduce their emissions could be seen as 'penalising success'.

Male 1: Is it not bias on how hard you work? I work hard for a disposable income so therefore it's a privilege for me to go away [on holiday].

Female 1: I don't think people should be penalised if they've got to a place in life where they can have some luxuries, I guess. I don't think they should be penalised because they've worked hard for it, but I do think they should be responsible and aware.

Central London

However, most participants did not support these viewpoints. They tended to separate the idea of rewards for hard work through income, with which they had no problem, from the idea of choosing to spend that income on high-emitting goods or activities – which they felt could be the subject of fair criticism.

Recognition that 'average households' would be required to reduce emissions

Although participants' support for policy measures to encourage sustainable consumption was often rooted in a desire to ensure high emitters would be required to change behaviour, it is important to note that they envisaged these measures applying to average households ('middle emitters') too. While many of the comments directed at the high-emitting character sometimes resembled a kind of environmental 'banker bashing', it was clear that participants saw the policy framework to reduce emissions as having a wide incidence across society and not just hitting the highest consumers. To use a tax analogy, they saw it as the equivalent of an income tax rather than a bonus tax.

This was partly because participants clearly recognised the extent to which it was necessary to require changes from the 'average household' – symbolised by the 'middle-emitting' character, Vera, in our stimulus material – in order to achieve significant emissions reductions.

Male 1: We said earlier that Vera probably represents the majority of the population so if you can get people like Vera to reduce a little that would have a huge impact, whereas getting people like Jeff to reduce a lot probably wouldn't have as big an impact because there aren't as many of him …
Male 2: There's loads of 'Vera's' and it's Vera who's the one we need get down isn't it?

Cockermouth

There was also a strong feeling for many participants that, while those with the greatest ability to reduce emissions should bear the greatest burden, this should nevertheless be part of a framework that applied to everyone in society. The universality of any policy measure was seen as essential to its legitimacy (something we discuss further below).

Female 1: With Vera there's possibly a little bit of room for manoeuvre, but with Jeff there's obviously room for manoeuvre …
Female 2: I agree with that, but I don't like the sound of Jeff being the only one to have to make changes though. That doesn't seem right either.

Barnet

Male 1: For me, the high emitter would be leathered. Absolutely leathered.
Female 1: I suppose in an ideal world they should all try. You can't just say he's got to do it. They've all got to try and save something, even your single old bloke down there.

Coventry

A key question in interpreting our focus group discussions is the extent to which participants' enthusiasm for policies and measures to change behaviour extended to their own behaviour. These focus group exercises placed participants in the role of the policy-maker, asking them which policies they thought

were best or fairest, and which they would support. Did they see the policy frameworks they were calling for as applying to them too, or did they support them because they thought they would only apply to other people?

At several points during the focus groups, it became clear that many participants were indeed viewing the policies under discussion as something to which they would be subject. Some offered comments from this perspective too.

Moderator: [*Explains how a personal carbon allowance would work*] Just talking through a system like that, what do you think? Does that horrify you? Or does that seem a sensible response?
Female 1: I like it …
Moderator: You like the policy?
Female 1: Well, I wouldn't like *doing* it. I would have to make changes that I wouldn't like, but I feel that it's necessary and it seems fair to me.

Glasgow

This last quotation highlights a critical distinction that was evident in participants' comments throughout the groups: the distinction between liking a policy and accepting it as legitimate. Many of the sentiments expressed in the discussions and quoted in this report seem, on the face of it, strongly pro-environmental. However, it would be a mistake to think our participants took this position at the outset, or that they had a particular desire to change their behaviour or to see behaviour-change policies implemented. Rather, talking through the issues, it was clear they thought that behaviour change was necessary and important, that people had an obligation to change their behaviour, and that (in some cases) government should intervene to ensure this happened, provided it was done fairly. On those grounds, they often expressed support for policies even if they did not personally like them.

We can see this dynamic in action in the next extract, reporting a discussion with one of the male participants in our focus groups (who was perhaps the least pro-environmental and most resistant to behaviour change of any participant in our groups).

[*Early on*]
Male 1: If I had the money and stopped working I would go to Hong Kong five times a year and fully enjoy it.

[*Later*]
Male 1: If you told me I could only fly to Hong Kong once every five years and that's legislation then so be it.
Moderator: From your comments earlier that sounds like something you wouldn't like – because you said you'd like to fly more. Would it be something that you'd accept or not?
Male 1: You have to accept it. If there was legislation and you wouldn't be able to fly twice a year or you'd have to pay more, then you have to accept it … You can't go around willy-nilly because legislation says you can't because of the CO_2 emissions.
Female 1: You don't mind it being legislation – if it's applying to everybody.

Cockermouth

Fair shares, emissions limits and carbon allowances

Several participants suggested that there should be individual limits on household emissions – especially limits affecting high emitters, but also ones that would potentially affect middle emitters too. This sentiment came out particularly strongly in the exercise comparing the three characters.

[*The group discusses the three characters*]

> *We've all spoken about Jeff. He needs to reduce his [emissions] by a huge amount, Vera by a smaller amount and William seems fine. So maybe there should be a level that everybody's got to try and get down to, regardless of where they are?*
>
> Male, Glasgow

Even before the exercise on PCAs, some participants spontaneously went beyond the idea of limits to the idea of 'fair shares' of carbon emissions. As described above, discussing inequalities in household emissions in the context of scarcity tended to bring out this fairness dimension quite strongly. In this exercise, it was the act of deliberating over how to reduce aggregate household emissions in the context of vastly unequal household emissions that led some participants to suggest an equal share of emissions for everyone.

> *I would get a mean [average] of everyone and say they all have to operate within that range.*
>
> Male, Llanelli

In a later exercise, participants were introduced to the idea of a PCA with tradable carbon credits, and were shown how this would affect the three characters they had been discussing.

Participants' initial responses to the idea of a PCA were sceptical about whether such a scheme could work in practice ('it's going to be very difficult to implement'; 'I just can't see it being viable'; 'what about the Queen?'). Participants suggested several practical barriers, the strongest of which related to how the scheme would be monitored and enforced ('who regulates it?'; 'how could you police it?'; 'the cost of enforcing it would be huge'; 'what are they going to do, put a CO_2 sensor in every inch of your house?'; 'if you don't pay, what happens?'). In particular, there were deep concerns about the possibility of fraud, or people evading their responsibilities ('there's going to be a black market of people flogging credits left, right and centre'). Many participants also doubted whether the public could be persuaded to accept such a scheme.

However, when the discussion moved beyond these practical objections to discuss the *principle* of PCAs, several participants volunteered that they thought the idea was 'fair' or 'good'. (As we will see later, other participants, when asked to choose between different types of government intervention, preferred either taxation or the regulation of specific behaviours to a PCA.) This next group discussion illustrates the point.

Moderator: Some people say a personal carbon allowance would be fairer than it is at the moment. Other people say this would be a massive constraint on our freedom and would change the nature of our lives. What do you think?
Female 1: I think it's a good idea.
Female 2: Well, if they gave everybody these credits, it would make everybody think before they use energy.
Female 3: It's not ideal, but eventually we'll have to do something.
Female 2: We can't keep going 'oh, it's breaching my human rights' all the time. We've got to do something, so just get on and deal with it …

Coventry

Other participants resisted the idea that there should be limits on household emissions or carbon allowances, suggesting it would be too big a constraint on freedom ('it's a slippery slope'; 'it's changing your way of life'). Among those who objected to carbon allowances or limits were participants who recognised the fairness case, but felt uneasy about government intervention of this kind (an issue explored in more detail below).

I think people need to understand and accept the limits. The problem is when the government legislates. When you go down that route then people tend to rebel against that kind of thing. So people need to be educated to realise and accept the responsibility to reduce emissions …

Male, Llanelli

For those that were attracted to a PCA, the key attraction was equality: it would create a universally applicable responsibility on households to control their emissions and it would give everyone an equal entitlement.

I actually think it'd be a good idea because it would make all men equal and then everyone would be doing their bit.

Female, Barnet

While many participants were attracted to the logic of equality inherent in a PCA, they also saw it as idealistic and impractical, and the discussion would quickly move to the problems with the notion of equality. Participants recognised a variety of ways in which an equal allocation of carbon credits would be unfair and they discussed the range of exceptions that would need to be made to the principle of equality.

You can't equalise [emissions], can you, because you can't equalise people*. We're all different.*

Female, central London

You've gotta look at the person and what their needs are, what their income is and, I suppose, where they live.

Male, central London

You can't put the same limit on the emissions for every single person … A bit like the benefits system … if you had a big family you'd be given more.

Female, Coventry

Nevertheless, nearly all participants (even those who were not attracted to a PCA) started out with a default notion of equal allocations of carbon when discussing fairness in reducing emissions. Where this was seen to be unfair, situations were then viewed as deviations from this underlying principle of equality.

Should a focus on behaviour be macro or micro?

Debating the merits of a PCA, participants seemed to be divided between those who thought holistically about household consumption and those who preferred a more fine-grained focus on specific behaviours. Participants in the former camp tended to favour a PCA rather than targeting specific activities (such as banning or taxing harmful products or activities); those in the latter camp tended to favour targeting specific activities rather than having a PCA.

For participants whose support for policy was driven by normative judgements about specific behaviours, there was a strong preference for regulating specific activities. Many participants found it hard to say that using a large amount of energy overall was 'wrong', since the activity that might lead to a household exceeding its allowance could be perfectly unobjectionable. By contrast, these participants found it easy to describe particular activities as 'wrong', such as using wasteful products, leaving a car engine running while remaining stationary, or taking 'too many' flights in a year. In short, they found it easier to judge the emissions from a particular activity than to judge a household's aggregate emissions. And since notions of fairness and 'right and wrong' were the basis for justifying government intervention, they wanted policy to focus on specific behaviours. This position was held by around three-quarters of our participants.

On the other side stood participants who found it arbitrary to target particular behaviours, since a preference for one carbon-intensive activity could be offset by eschewing carbon-intensive activities in other contexts. For them, it seemed wrong to judge individual activities in the abstract without taking someone's overall behaviour into account.

> *I'm going to Wales for Christmas, with a friend, Stan. His car does nine miles to the gallon – it's a Rolls-Royce … But in other ways he's very environmentally friendly and so on, so I'm not going to pass judgement on him because in so many ways he's environmentally friendly.*
>
> Male, central London

These participants (around a quarter of our sample) tended to prefer the flexibility of a PCA to banning or regulating particular behaviours, which they saw as too draconian.

> *For you to say 'you've got two 4x4s, you've got to get rid of one … and, you, you've got to downsize from a four- to a three-bed house' … I think it gets ridiculous … I think everybody should be able to operate whatever lifestyle they choose, but within an acceptable band of CO_2 emissions.*
>
> Male, Llanelli

Attitudes to voluntarism and compulsion

If the UK was going to reduce its carbon emissions, and a proportion of this had to come from the household sector, the vast majority of our participants believed that reducing household energy use should be compulsory and not voluntary. In exercises discussing possible approaches to reducing carbon emissions, the voluntary approach was routinely rejected as it could allow people to choose not to participate.

Moderator: Should reducing your energy use be voluntary or compulsory?
Female 1: Well it's gotta be something more than voluntary, hasn't it, or else people will just ignore it.
Male 1: It has to be compulsory. I don't know how you do that but I think there has to be some sort of compulsory measure in place … Because with voluntary you're kind of saying even if it's not good it's alright to do it.

Central London

Several participants suggested that the current situation already demonstrated the inadequacies of a voluntary approach.

Male 1: I don't think voluntary is gonna work. It really won't.
Female 1: Giving someone an option isn't gonna make them do it. You need to sort of put your foot down and say 'this is what we need to do and if you're not willing to do it then you need to go somewhere else'.
Female 2: It's what we're doing at the moment anyway, really, when you think about it. It's voluntary at the moment …
Male 2: It's already been tested out and it's not really working.

Glasgow

These quotations highlight one of the strongest themes to emerge from these groups: a concern about other people's behaviour. Perhaps the most passionate sentiment expressed by the vast majority of participants was that if action was needed to reduce emissions, then everyone should be required to take

part. Anxiety that some people would dutifully cooperate while others avoided doing so was a recurring theme in all the groups.

Moderator: So – from what you've just said – is it important to you to know that other people will be required to cooperate as well?
Female 1: It's important.
Male 1: It's extremely important.
Male 2: Yeah, it's imperative that if I'm trying everyone else should be trying as well.
Male 3: I think for self-gratification I'd be happy to know I've done my bit, but I'd be dead annoyed to know that my next door neighbour didn't try.

Central London

Justifications for compulsion

Why should non-participation be a problem in a scheme to reduce consumption?

Earlier, we looked at two ways in which free-riding could be said to be harmful to others. First, with scarce environmental resources (specifically, resources that are rivalrous), the resource will be depleted if some people over-consume and this will harm others. In the context of climate change, this means that those not co-operating with efforts to reduce emissions are increasing the likelihood of dangerous climate change – and therefore the likelihood that others will suffer the effects of dangerous climate change. This view was seen in the groups; it tended to be expressed by participants noting that a failure to co-operate would lessen the effectiveness of efforts to tackle climate change.

Second, free-riding can be harmful if it results in an unfair distribution of burdens; some will enjoy the fruits of others' sacrifices without having to make their own contribution. With scarce environmental resources there is a further point that over-consumption by some means others will have to reduce their consumption even further to compensate in order to maintain the resource. This view was also seen in the groups; a failure to co-operate was viewed as unfair to the citizens who were co-operating (and whose efforts would have to make do for everyone).

Relating to the first of these two objections to free-riding, some participants justified compulsion directly in terms of the need to avoid the harms of dangerous climate change.

Male 1: If it's as serious as we've been led to believe then there should be bans and there should be, you know, we should be quite severe in combating it. Similar to the smoking ban, there should be limits in the amount of carbon emissions that each person can make and possibly banning products as well.
Moderator: What if somebody came up to you and said 'look, I should be free to do what I want and that would be a radical change to our lives'. What would you say then?
Male 1: Well, we've done it with the smoking ban and stuff and if the bigger picture is more important than the individual then you have to go along with it because it's bigger than the individual … It's supposedly about the world, so if the government believe in it and are serious about it they would have to do it, no questions asked because it's, it's about extinction.

Glasgow

Participants' views about the seriousness of the potential impacts of dangerous climate change reflected their basic belief that a stable environment conducive to human welfare was essential. This corresponds to one of the two key criteria (discussed in Box 1) that philosophers have argued are necessary before the members of a community are obliged to comply with the burdens of a co-operative scheme – namely, that the good being produced or maintained is 'indispensable' for welfare. The other key criterion is that the 'good' is a public good and, specifically, a non-excludable public good, and this was also reflected in participants' comments. Several alluded to the public nature of the goods and harms involved in order to

justify their preferences for compulsion – often expressed in terms of the 'bigger picture' or the 'greater good', and a view that the issue was 'bigger than the individual'.

> *I think with the government sort of stopping you at a certain limit, there seems to be a greater good at the end of it rather than, say, parking fines, where there doesn't seem to be such a greater good in it compared to this.*
>
> Male, central London

> *When you're looking at policies you need to look at it as what is best for the greater good not what is best for the individual, or what is best for my mate, but what is best for the human race as a whole.*
>
> Male, Llanelli

So, both these key criteria were spontaneously invoked (albeit informally) by participants to justify their preferences for compulsion over voluntarism. In terms of the conditions that philosophers have argued are necessary to generate political obligations to co-operate, it is clear that many of our participants intuitively recognised these conditions as being relevant in the context of action to reduce household carbon emissions.

However, justifications for compulsion in order to avoid climate harms did not last long in group discussions. Participants often reflected on the international nature of climate change and the futility of the UK acting if other countries did not. All participants felt strongly that action had to be global; inaction by other countries was seen to weaken the link between changing our behaviour and preventing climate harms, thereby removing an important moral justification for compulsion.

> *You think of a country like us, which is quite small, compared to a country like America or China. If they don't do anything, what's the point?*
>
> Male, Cockermouth

> *It's probably a lot easier for our government to try and say, you know, 'we're going to do this, this and this' and we'd probably give that a go. But if you've got a country like China or America who are not kind of willing to pay much attention to it, how do you control it [carbon emissions] with them?*
>
> Female, Glasgow

However, there was another way in which participants looked at the problem that led them to ground justifications for compulsion not in the avoidance of climate harms, but in the idea of fairness within UK society. This tallied with the second objection to free-riding given above: namely, that the failure of some to co-operate would result in an unfair distribution of burdens in reducing domestic emissions.

If the UK government had committed to reducing carbon emissions as part of an international framework (a commitment which participants saw as legitimate because they accepted the problem of climate change), then participants wanted to ensure that the burden of reducing household emissions would be fairly shared *within* the UK. Participants often voiced strong support for compulsion and regulation to ensure that everyone made a fair contribution and that no-one could evade having to 'do their bit'. Focused as it was on fair sharing of burdens in a domestic context, this support seemed relatively unaffected by concerns about the wider international context.

[*The group discusses some issues with reference to the high-emitting character, Jeff*]
Moderator: We seem to have a kind of love-hate thing going with the regulatory approach here. On the one hand, some of you don't like the idea of government saying 'you can't do this'. On the other hand, if everyone's got to make changes, some of you said you'd get annoyed by the idea of Jeff not being forced to do something as well …
Male 1: There has to be a level, there has to be, where everybody is doing it.

Cockermouth

Similarly, the majority of objections to voluntarism were expressed in terms of the unfairness of free-riding rather than the avoidance of climate harms.

[*The group is presented with the statement: 'I think everyone should reduce the amount of energy they use, but this should be voluntary, not compulsory. People using lots of energy shouldn't be penalised.'*]

> *Well that's not fair, because why should you be allowed to use as much as you want when I'm doing my bit?*

Male, Llanelli

Participants were especially exercised about the ability of 'rich people' to get around the system and avoid having to make a contribution. All participants tended to think of compulsion in terms of rules, and for them it was crucial that everyone was subject to the same rules.

Male 1: I think the everyday Joe like us, if they said to us 'right, we are doing this' we're like sheep, we'd have to follow suit. But obviously, if you've got millions …
Female 1: Rich people will just find a way around it.
Male 2: We have to see the rich and industry taking part big-style.
Female 2: Everyone's main concern is that it has got to be one rule, it has got to be one rule for everybody not just, you know, poorer people hit again.

Coventry

This sentiment of 'same rules for everyone' was very strong and universal, and fear of being taken advantage of by others drove support for regulation. This also led participants beyond the idea of compulsion in environmental policy and into the importance of enforcement.

[*One participant suggests limiting the number of flights someone can take, and the group discuss this.*]
Female 1: … Unless you're a famous footballer that jets around all over the place. It will always be, like, 'oh, yeah, that's for you lot, but David Beckham, you're alright love'. There's always exceptions. And it just wouldn't be fair to say 'you can't have more holidays a year', but he has four in one week.
Male 1: I think there's two ways of looking at it. You'll either be a cynic and say the rich guys will never change, or you have the regulations where they make them change and that's where governments need to be tough.

Coventry

> *It needs to be enforced and everyone's got to do it from poor to rich to old to young. Everyone's got to do it.*

Male, Coventry

In summary, given a requirement in the UK to reduce household carbon emissions and household energy use, participants demonstrated a strong preference for compulsion over voluntarism, with the strongest driver being a desire to prevent unfair free-riding by others.

Box 2: Assessing the strength of views on compulsion and voluntarism

Some of the discussions on these topics, reported above, were stimulated by presenting participants with statements and inviting responses – in particular, three statements regarding the extent of people's obligations to reduce their energy use and the legitimacy of government action to ensure reductions in energy use.

Exercises such as this can sometimes be distorted by the first respondents, whose views can shape and dominate the subsequent discussion. Before the discussions, we therefore asked each participant to assess in private how much they agreed or disagreed with the statements in Table 3 by scoring them (they were told these scores would not be revealed to the group).

Table 3: Participants' scores for obligations to reduce energy use

Statement	Average score 10 = strongly agree 1 = strongly disagree
Everyone will benefit from preventing climate change, so we have a right to expect everyone to make a sacrifice by reducing the amount of energy they use.	**8.4**
I think everyone should reduce the amount of energy they use, but this should be voluntary, not compulsory. People using lots of energy shouldn't be penalised.	**4.1**
I'm happy to reduce the amount of energy I use, but if I'm going to do it I want the government to make sure everyone else does it too.	**8.4**

The first and third statements received strong support, reflecting concerns heard throughout all our groups that frameworks to ensure sustainable consumption should guarantee equal treatment and that no-one should be allowed to free-ride, even if this required compulsion. By contrast, the second statement advocating a voluntary approach received far less support.

These average scores suggest that the majority support for compulsion over voluntarism evident in the group discussions was indeed an accurate reflection of participants' views, rather than result of group dynamics.

Opposition to compulsion

A belief that carbon emissions needed to be reduced did not translate into support for compulsion for everyone. A minority of participants were instinctively opposed to compulsion, though in only one of the eight groups (60- to 70-year-olds) was this opposition to compulsion the majority view.

Female 1: I don't think you can force people to do things.
Female 2: No, I don't. You can encourage them, but you can't force them and it would be wrong to.
Male 1: I'm very much against applying any force to anybody … I would like to see a society where if there is an issue with carbon emissions then, yes, education and, yes, investment, but I would not like to see it directed at any form of compulsion.

Barnet

> *I just don't think we should be dictated to. We already live our life being told what to do by the government. We need a bit of freedom in our life …*

Female, Llanelli

It is important to note, however, that those participants opposed to compulsion were not indifferent about whether or not others contributed to the collective effort. It was also clear that many of them saw the issue of sustainable consumption in moral terms, and saw a role for more subtle types of sanctions for non-compliance, such as social pressure and ostracism.

Female 1: Peer pressure will eventually come to Jeff in that he'll be just a little bit embarrassed and he'll want to join everybody else.
Female 2: Yes.
Moderator: So are you suggesting there's a kind of stigma?
Female 1: Yes, there is stigma.
Male 1: Yes, I agree with that and it should be aimed at him, whether he takes any notice.
Female 3: Peers, I suppose it is what your peers are doing.
Female 2: That's right. He'll eventually take notice ….
Male 2: I think there is a duty on people, but I think it should be applied morally not legally.

Barnet

In summary, participants who were opposed to compulsion did not reject the idea of looking at emissions and energy use in normative terms, or feel unconcerned about fairness. They simply felt that the undesirability of government intervention outweighed these other issues.

Voluntarism as a first step and as a 'tone of voice'

Another subset of participants seemed initially to favour voluntarism, although it gradually emerged that this was more an issue of strategy and style. Several participants favoured voluntary approaches as a first step, but also wanted them backed up by the prospect of compulsion if they proved ineffective.

> *It seems to be like a one-, two-, three-stage thing. One, we'll throw it all out there and get people to do it voluntarily. If that doesn't work then we'll move onto the second stage and if that doesn't work we'll just, like, limit everybody.*
>
> Female, Coventry

> *I think it should be people's choices initially to try that and if it doesn't work then in a few years down the line we should look to take more drastic measures.*
>
> Female, Glasgow

For other participants, it transpired that a preference for voluntarism was more an issue of tone in how government tries to get people to do things. They wanted interventions to be framed as asking people to take part voluntarily but they were also clear that those who did not comply should be sanctioned.

> *Me, I would like to give people information saying we have to do this, we're reducing it and I want you all to do it voluntarily, but if you can't then I am going to penalise you.*
>
> Male, Llanelli

Upstream versus downstream regulation

When participants discussed regulatory approaches, it was clear they often envisaged this as 'upstream' regulation on manufacturers and energy producers. Indeed, nearly all our participants – including those who seemed most resistant to government intervention to change behaviour – seemed relaxed about upstream regulation. This was despite appreciating that it would remove their choices as consumers or

that the burden might be passed on to them through higher costs. For many it was just the obvious thing to do. Some thought about the issue specifically in terms of the responsibilities of manufacturers.

Male 1: Shouldn't it be more of a corporate thing? Because if he's wanting to drive a more expensive car, stop making them. I think you should really be taxing the people that supply these things.
Female 1: I agree with that as well because the creator of these products has a social responsibility to use more environmentally friendly methods, be more sustainable …

Glasgow

In particular, it was clear that many participants preferred the idea of removing choices from consumers through upstream regulation to behavioural regulation that would be enforced downstream at the level of the individual. Even if they knew upstream action affected individuals in exactly the same way, participants were much happier with policies that would be policed at the level of manufacturers and the energy industry than with policies that would involve policing household behaviour.

Female 1: I agree with the banning option … I agree on that one very strongly. The only way to stop people having them is if we can't get them. And the only way to do that is to actually ban the existence of them. If we stopped allowing the manufacturers and importers of each item to do it, that would work.
Male 1: I don't think you can bring in bans on things. I mean if you don't make them that's fair enough but that's different to banning and arresting someone for having a certain type of kettle.
Female 1: Oh no, no, no, I'm talking about banning it from being on sale.

Cockermouth

Upstream regulation was generally seen as less threatening or overbearing on the part of government, even if it removed choices from people. As one participant put it, it was government 'targeting the activity' rather than 'targeting the person'.

> *There's a distinction between aiming it at the individual and aiming it at the activity … I think it's better to tax or regulate the activities rather than have a kind of 'pollution police' coming round to the door. What you could say to people is 'are you as a public aware that some of the activities you do are really not very good for the planet? If you choose to do them then be aware that you will feel the effects. But it's not you that will be punished; we are aiming at these activities because we regard them as harmful'.*
>
> Male, Glasgow

A further source of support for upstream solutions was that they were seen to take the pressure off individual decision-making, circumventing the need for people to be disciplined enough to avoid anti-environmental consumer choices. This is a form of 'self-paternalism', discussed further in the next section.

Regulation as encouragement and enlightened self-paternalism

Finally, it is worth noting that participants sometimes commented on the value of compulsion and government intervention as a way of overcoming people's inertia (including their own). Participants spontaneously used the language of 'pushing', 'kicking' and 'shoving' rather than 'nudging' in relation to encouraging behaviour change.

> *I do believe government intervention to kick people in the right direction is crucial.*
>
> Female, Cockermouth

I think sometimes you have to push people into doing things because they don't do it on their own. Like at school: somebody tells you to learn something and you learn it; you couldn't be bothered on your own. The government has to get involved …

Female, Barnet

Participants' recognition of the value of compulsion and government intervention extended to openly acknowledging their own weaknesses in changing their behaviour, even when they wanted to.

Your life revolves around, you know, 'Do I have enough to feed the kids today?', 'Get the kids in the bath and do this and do that' and you never really have the time or the inclination to sit down and say, 'Are solar panels a good idea?' I could and should recycle more, blah blah blah, but probably I won't until the government comes along and says 'We're going to pull your fingernails out unless you recycle more'.

Female, Cockermouth

In one exercise, participants were asked for their responses to the statement: 'I want to cut my energy use but it's a bit of a pain. Left to myself I find it very difficult to be disciplined enough to really change my behaviour. I'd rather the government just changed the law and made me do it. That would be much easier.' Participants simultaneously expressed distaste at the apparent weakness and passivity of the sentiment ('that's a cop out', 'it's nanny state', 'you lazy bugger'), combined with sympathy and a recognition of its relevance ('it probably applies to most people'), including to their own lives and behaviour.

Male 1: I think it's spot on. People, if given the opportunity, won't fork out any extra, won't reduce their CO_2 emissions. I mean, they understand what they need to do, but unless they're made to do it they won't do it.
Male 2: It's like the smoking ban. The first year was, like, 'Do you mind going outside to smoke?', and it was, like, 'No, I'm having a beer'. But then it was, like, 'No, you *will* go outside'. And now they reckon smoking is, like, down 40 per cent ...

Coventry

Finally, one or two participants clearly recognised that, as well as providing a framework for compulsion, legislation can also change behaviour by communicating a particular set of values and norms (the 'expressive function' of legislation). In this way, it could be used for 'persuasion' and could 'push people over the line' in changing behaviour.

Male 1: I have to say, as probably the oldest person in the room, the prospect not that many years ago of Scotland passing a law saying you can't smoke in a public place would have seemed absolutely unthinkable to me. I would have thought 'this is fantastic, but it would never happen'. And now it has happened. I think part of the process … there's this link-up between legislation and persuasion followed to behaviour. I think the level of compliance with the smoking ban reflects the fact that Scotland was ready to accept that kind of legislation, so I think that's in a way proof that you can persuade a society to behave in a certain way …
Male 2: I think with regards to the smoking ban when it first came in everyone was like 'oh, you can't do that, you can't do that, that's not fair', but actually seeing it happen, it's not so bad.
Female 1: I suppose seatbelts was the same thing too.

Glasgow

Economic approaches versus regulatory approaches

One exercise in the focus groups enabled participants to discuss the advantages and disadvantages of possible policy approaches to sustainable consumption, including contrasting voluntary, economic (tax) and regulatory approaches. Here, 'regulatory approaches' referred to measures to proscribe particular goods and behaviours, and participants discussed a wide set of possibilities under this label, ranging from product standards to non-tradable PCAs. Participants were also made aware of the interactions and overlaps between these different approaches.

When asked to choose between taxation and regulatory approaches, most participants strongly preferred regulatory approaches. Around six out of each group of eight usually opted for regulatory approach, except in the case of the group of 60- to 70-year-old participants, where those preferring regulatory approaches were in a minority. The key reason for rejecting the tax approach to behaviour change was that participants thought it discriminated unfairly against those on low incomes, whilst leaving those on higher incomes unaffected.

Occasionally participants emphasised that this lack of effect on high-income households meant that an economic approach would be less likely to succeed in changing their behaviour and reducing emission levels.[43]

Female 1: I'm half-and-half [about tax] because those who have money can buy more energy … If their allowance runs out they can just buy more…
Male 1: They have got much more of a disposable income so they can absorb that penalty and it's not changing their behaviour.

Central London

> *Because you have loads of money you can buy as many [carbon credits] as you want, but it [CO_2] is still going into the environment …*
>
> Female, Lanelli

But the vast majority of objections to the tax approach were that the unequal impact of tax on those on low and high incomes would be unfair.

> *I think it's unfair on pensioners and students because they're not in a position to pay. If you're on low income you haven't got the ability to make a choice, which is different to if you've got the money and you decide.*
>
> Female, Barnet

In the exercise discussing the different characters, the high-income high emitter (Jeff) was seen to be immune to the effects of an economic framework that, in participants' eyes, was essentially still a 'voluntary' framework for him.

> *The thing is, Jeff is always kind of living within the voluntary framework. The economic approach wouldn't matter to him because he can pay the taxation, so the only way to get him to reduce his carbon emissions is by doing the regulatory approach – if he was made to do something. The other two [approaches] wouldn't have any effect on him.*
>
> Female, Llanelli

In order to address this fairness issue within an economic framework, some participants spontaneously suggested solutions equating to rising block tariffs for energy bills or carbon credit prices.

For the minority who preferred taxation to regulation, the key factor was that taxation seemed a less severe constraint. It allowed flexibility to decide your own level of consumption, provided you were willing and able to pay.

Moderator: Let me ask you about that … Is greater expense a burden you feel more comfortable with than the idea of not being able to do something?
Male 1: Absolutely is the answer to that.

Barnet

> *I don't think you can say to somebody they can or they can't do something. They've just got to be penalised for the high usage of it. You can't turn around and say 'you can't drive that car because you've used it three times this week' because that's their choice if they want to drive.*
>
> Female, Coventry

Ultimately, most participants in most groups had sympathies with both perspectives illustrated here – the advantages of individual flexibility in the taxation approach, and the advantages of ensuring fairness in the regulatory approach. The extent to which one attitude dominated often reflected the priority attached to particular issues in participants' reasoning, with fairness very prominent.

Resistance to the commodification of environmental resources

Another recurring theme in participants' qualms about environmental taxation was a reaction against the commodification of environmental resources implied by an economic approach. Producing 'excessive' emissions was often felt to be wrong and disrespectful, and participants frequently resisted the idea that those on higher incomes could simply compensate by paying more. Participants implied that they saw the demands of environmental citizenship to go further than simply the internalisation of costs.

[*The group considers the characters and their behaviours*]
Male 1: Do you know what gets me? This guy here [*pointing at the low emitter*] he doesn't know anything about CO_2 emissions and he's being cautious. This guy there [*pointing at the high emitter*] that should know better is flippant about them.
Male 2: But if you're making enough then why not? You're paying the price of two people.
Male 1: Let's go back to what I said: 'I'm alright Jack.' Because he's got money he doesn't care, why should he? Let other people deal with it …
Male 2: It is a fair point. It's like the recession: if you're making enough to be above the recession constantly then you don't really care about it, you don't have to cut your lifestyle back. It's not affecting you …
Female 1: I kind of agree. Like, if you're paying for it then it's not OK but it's kind of more acceptable. Maybe it should be, like, if you emit more CO_2 then you have to recycle more rather than paying because it shouldn't be fair that if you've got a better lifestyle just by paying more.

Central London

Like the suggestion above of doing additional recycling, many participants suggested ideas for redress for high use of resources by those on high incomes in order to reassert equal status and equal citizenship. On several occasions participants suggested that high emitters should have to make wider social contributions in order to offset their 'excessive' environmental impact. The implication was that paying extra was not enough and that some other kind of contribution might be required.

[*The group discusses the high-emitting character*]

> *It's not a life that people really need to live like and I think it's a social statement. Um, I don't know – it's hard to say if he's not a real person – perhaps he would be open to ideas or doing some charitable work or something?*
>
> Male, Barnet

While there was agreement that it was important for people to pay for the resources they consume, including compensating for any environmental damage they caused, a few participants pointed out that this was nevertheless a separate issue from that of reducing consumption itself. Some even suggested that economic approaches were missing the point.

> *We can get as much tax as we want but the money can't stop the carbon. We have to get the carbon down.*
>
> Male, central London

> *If you can buy your way out of it, is it really getting at the cause that it set out to?*
>
> Male, central London

Cynicism about taxation

Finally, on top of these qualms about environmental taxation, there was plenty of cynicism about taxation in general, driven in particular by suspicion of government. Many participants doubted whether the motivation behind environmental taxation was actually to change behaviour and protect the environment – and, for them, this mattered very much indeed.

> *With taxation … I'm just concerned about the government's way of slapping the masses as usual.*
>
> Female, central London

> *With [taxation] what I think will happen in the long term is people will become cynical about the global warming issue and think 'this is just there to generate more income for the Treasury'.*
>
> Male, Llanelli

Strikingly, participants repeatedly claimed that environmental taxation would be more acceptable if they knew the proceeds were being spent on environmental protection. This might seem irrelevant given that the purpose of tax in this context is pricing environmental goods appropriately, but our participants saw it as an important factor in any sense of tax legitimacy.

Female 1: I suspect with taxation it will have an effect but you won't, if you like, win the hearts and minds of people. I mean our business energy bill, there's an energy tax at the bottom, but as far as I'm concerned that's just another tax. That's government trying to take more money. They're not using it to plant trees, they're not using it to produce windmills, they're not using it for tidal power. If they could say that to me 'every penny of that tax went to plant trees or make windmills', then I would say 'OK, fine, you can have the tax with my blessing'. But as far as I'm concerned it just goes into their coffers.
Male 1: It's just another tax.
Female 1: To bail out the banks.
Male 2: It's like when say road tax goes up. If I knew that road tax went to fixing the pot holes then I wouldn't mind. If you can see that your tax pays for something specific then you accept it more than if it just goes off to …

Male 1: Some sort of bureaucracy.
Male 2: Or MPs' expenses …

Cockermouth

Summary of key points

- Participants thought that those with the greatest ability to reduce their CO_2 emissions should bear the greatest burdens in doing so. Key factors in assessing ability to reduce were whether the activities responsible for emissions were necessary or luxury activities, the availability of alternatives, and also households' capability to adjust their behaviours (including ability to pay).

- The vast majority of participants believed that participation in a scheme to reduce household emissions should be compulsory and not voluntary. This was driven by a concern that a voluntary framework would allow some people to choose not to participate while others were dutifully participating.

- Some participants justified compulsion in terms of preventing climate change, but for most it was driven by a desire to prevent free-riding by others. Interestingly, while the former was susceptible to concerns about international action on climate change, the latter could be applied purely within a UK context, allowing support for compulsion to be separated from international issues.

- When asked to choose between tax and regulatory approaches to sustainable consumption, most participants had a strong preference for regulatory approaches. They believed taxes discriminated unfairly against those on low incomes, while leaving those on high incomes unaffected.

5 Participants' changing attitudes in response to the focus groups

This chapter examines how participants' attitudes changed during the course of the groups, including their attitudes to climate change, environmental policy and personal behaviour change.

A subset of 30 participants completed questionnaires both before and after the focus groups, enabling us to explore how attitudes changed in response to the material presented during the discussion. Using Defra's segmentation model, we were able to analyse whether these changes in attitudes 'moved' participants from one segment to another in terms of their environmental profile.

Figure 6 shows (for this subset of 30 participants) the categorisation of participants before and after the focus groups, demonstrating that there was noticeable movement in a pro-environmental direction after participants took part in the focus group exercises.[44] Most significantly, there was a rise in the number of Positive Greens and Waste Watchers and a decline in the number of Honestly Disengaged and Stalled Starters.

Perhaps more revealing is to look at changes in responses to certain questions that underpin the segmentation method. First, participants became more concerned about climate change – perhaps unsurprisingly, given that several of the exercises presented them with information about its science and impacts. For example, Figure 7 displays answers to a question about whether the effects of climate change should be a matter of concern. Of the 29 participants who answered this question before and after the focus groups, 14 did not change their answer, 11 changed their answers in a pro-environmental direction; and 4 participants changed their answers in an anti-environmental direction. The average change was a 0.4 point movement along the scale (running from 'Strongly agree' at –2 to 'Strongly disagree' at 2) in a pro-environmental direction.

Figure 6: Participants by Defra segment, before and after focus groups

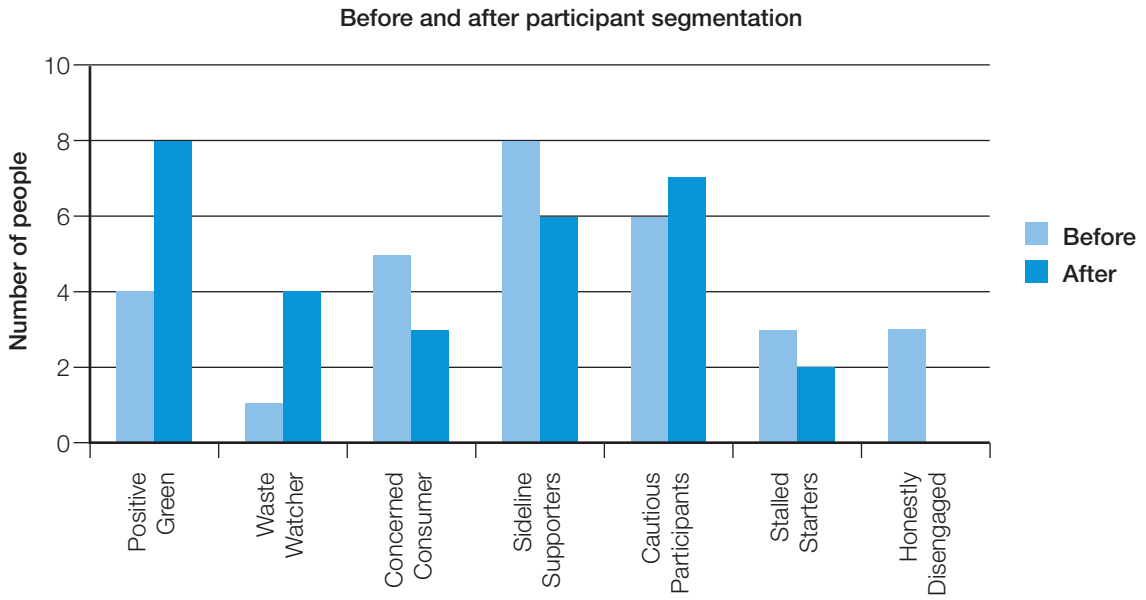
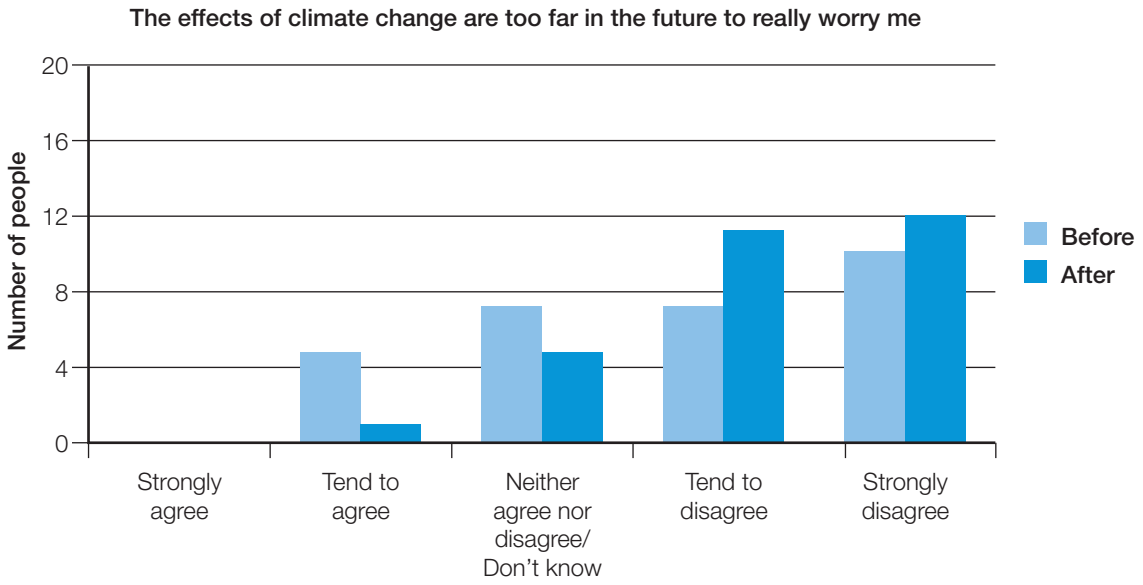


Figure 7: Views on effects of climate change, before and after focus groups



Second, participants became more supportive of environmental policies (the policies covered in the Defra survey were on recycling and on paying more for car use and flying). For example, Figure 8 shows answers to a question on the principle of internalising the environmental costs of aviation. Of the 29 participants who answered this question both before and after the focus groups, 13 did not change their answer, 13 changed their answer in a pro-environmental direction and 3 changed their answer in an anti-environmental direction. The average change was a 0.5 point movement along the scale (running from 'Strongly disagree' at –2 to 'Strongly agree' at 2) in a pro-environmental direction.

Third, participants also displayed an interesting shift towards being more concerned with the behaviour of others. Perhaps reflecting the support for compulsion discussed in the previous chapter, participants became more likely to think it was not worth acting unless others do the same, as Figure 9 shows. In Defra's segmentation model, this equates to moving in an 'anti-environmental' direction – though, as discussed, this sentiment could be a prerequisite for supporting quite radical frameworks for behaviour change, including compulsion. Of the 29 participants who answered this question before and after the focus groups, 13 did not change their answer, 4 changed their answer in a 'pro-environmental' direction and 12 changed their answer in an 'anti-environmental' direction according to Defra's definition. The average change was a –0.4 point movement along the scale (running from 'Strongly agree' at –2 to 'Strongly disagree' at 2) in an 'anti-environmental' direction.

Finally, perhaps the most surprising changes were in participants' responses to survey questions about their personal behaviour. By and large, the focus group exercises did not consider participants' own behaviour or ask them questions about it. Instead, participants were asked to consider the issues of climate change, household emissions and public policy from the perspective of a decision-maker. It therefore remained an open question to what extent these discussions might affect participants' feelings about their own behaviour.

In fact, the survey questions about personal behaviour showed some of the biggest changes in a pro-environmental direction, as Figure 10 shows. Of the 29 participants who answered this question before and after the focus groups, 13 did not change their answer, 11 changed their answer in a pro-environmental direction and 5 changed their answer in an anti-environmental direction. The average change on this question was 0.6 point movement along the scale (running from 'Strongly agree' at –2 to 'Strongly disagree' at 2) in a pro-environmental direction.

Figure 8: Views on liability for costs of environmental damage from air travel, before and after focus groups

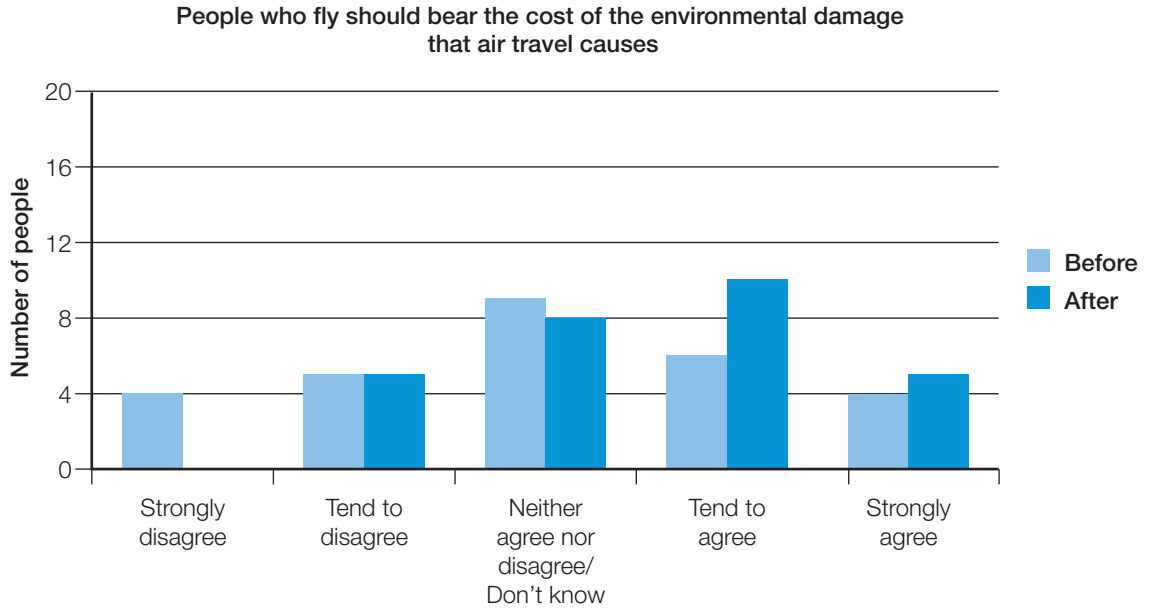


Figure 9: Views on effect on self of environmental behaviour of others, before and after focus groups

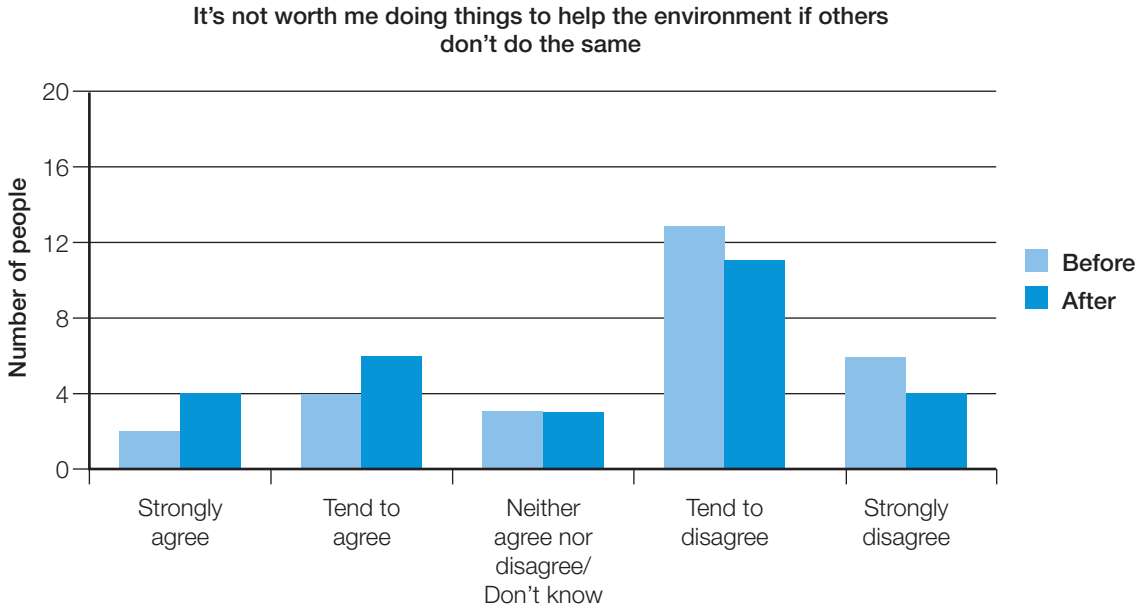
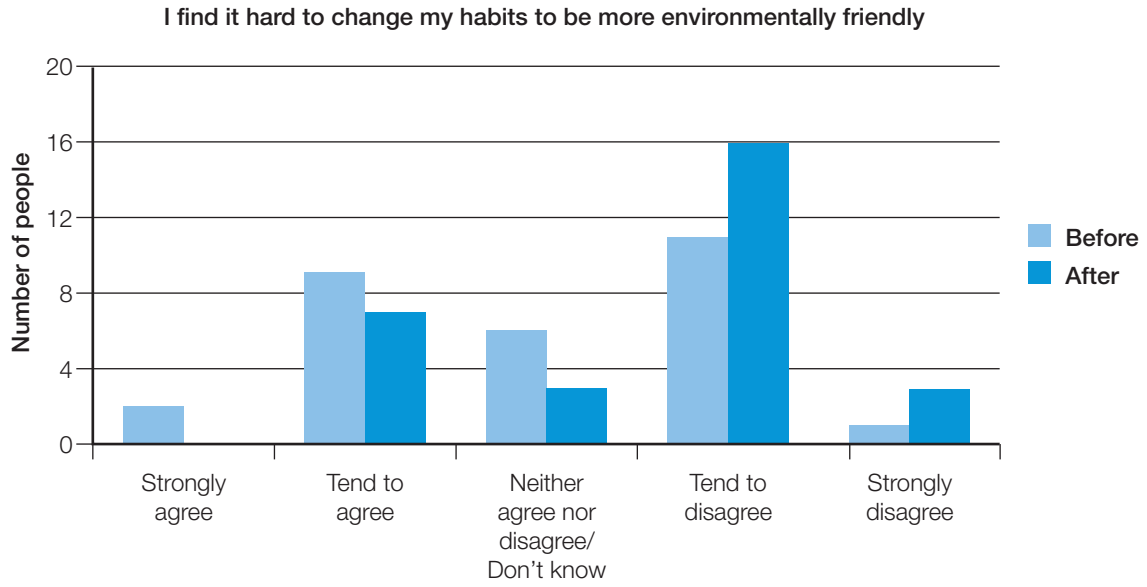


Figure 10: Views on personal environmental behaviour, before and after focus groups



Appendix II provides case studies of how the attitudes of individual participants changed during the discussion.

Summary of key points

- In response to the information presented and the focus group discussions, our participants, on balance, became more concerned about climate change and more supportive of environmental policy than they were at the beginning of the groups.

- Perhaps reflecting the support for compulsion discussed in the previous chapter, participants became more concerned about other people's behaviour, including becoming more likely to think it was not worth acting if others did not do so too.

- Participants became more positive and optimistic about personal behaviour change, even though this had not been discussed explicitly in the groups.

Conclusion: Lessons for policy-makers and advocates

The sustainable consumption of common-pool resources is an example of a 'co-operation dilemma' where, from a self-interested perspective, it can seem individually rational to free-ride, even though it is collectively sub-optimal to do so. Evidence from other areas of behaviour suggests that the perspective from which co-operation dilemmas are viewed can have a significant impact on people's willingness to moderate or accept constraints on their own behaviour. Approaching these dilemmas through the 'lens' of individual freedom tends to focus people on the extent to which calls to change their own behaviour are legitimate, desirable or convenient. By contrast, approaching such dilemmas through the lens of collective goods tends to focus people on the extent to which their behaviour (and that of others) impacts on society, including the social harms that result.

Furthermore, the lens through which people view co-operation dilemmas is strongly open to influence; much depends on the way in which the issue is framed and presented to them in the first place. Evidence suggests that making people aware of the collective context of their behaviour can trigger a deeply held set of fairness instincts in relation to co-operation and free-riding (where the question of legitimacy becomes a question about whether it is legitimate *not to constrain* individual behaviour). Here, anger at others' failure to co-operate in the maintenance or protection of important collective goods is a very powerful emotion driving public support for fair rules and enforcement (as witnessed in areas from dog fouling to tax avoidance). So, one important route to building public support for sustainable consumption might be encouraging the public to look at the issue in terms of fairness.

Despite this, prevailing approaches to motivating sustainable consumption, by both government and non-governmental organisations, rarely talk about fairness – indeed, they often actively avoid it. Many recent government strategies for behaviour change have tended to address behaviour within a 'consumer' paradigm. As a result, these strategies tend to be quite 'individualised', often focusing on the choices individuals make in isolation and seeking to appeal to 'egocentric concerns', such as financial self-interest.

It is our contention that focusing solely on self-interested or self-oriented motives could be missing a trick. Accordingly, this project aimed to explore strategies that can tap into people's sense of fairness about consumption and climate change in order to build public support for behaviour change and sustainability policies. We did this through a series of deliberative focus groups, analysed earlier in this report. In this concluding chapter, we briefly discuss how the results from the groups relate to the key research questions outlined at the end of Chapter 1, before drawing some lessons for policy-makers and advocates.

What did the results say about our key research questions?

One project objective was simply to explore the extent to which people can look at climate change and sustainable consumption in terms of fairness. If they can, we wanted to know what information helps to trigger these instincts.

We found that most participants did naturally look at consumption in these terms when presented with key information about personal consumption and the environment (even if they did not naturally use

the words ‘fair’ and ‘unfair’). Specifically, most participants had an intuitive notion of excessive consumption (for example, drawing distinctions between ‘necessary’ and ‘wasteful’ behaviours), and most participants viewed both excessive consumption and widely unequal levels of consumption as problems.

As well as information about personal consumption and environmental harm, the key bit of information that seemed to motivate these views was a notion of scarcity – in this context, limitations in the earth’s capacity to absorb CO_2. Participants tended to feel that excessive consumption and unequal consumption were problems in the context of a scarce resource, but not otherwise. As discussed in Chapter 1, this is logical: it is the notion of scarcity that allows people to understand an environmental resource as a rival good, and to connect personal behaviour (over-consumption) with harmful social consequences (resource depletion). For some of our participants, the idea of scarcity led explicitly to a notion of ‘fair shares’.

On the subject of fairness in reducing household emissions, participants thought that higher emitters should bear a greater burden of reducing emissions than lower emitters. More precisely, they thought that those with the greatest ability to reduce their CO_2 emissions should bear the greatest burdens – and higher emitters were generally seen to have a greater ability to reduce emissions than lower emitters. Other factors involved in judging ability to reduce emissions were whether the activities in question were ‘necessary’ or ‘luxury’ activities, the availability of lower emitting alternatives and households’ capability to adjust their behaviours (including their ability to pay).

The focus groups also suggested that looking at climate change and sustainable consumption in terms of fairness motivates support for action to reduce CO_2 emissions. This was seen both in the group discussions and in the surveys that participants completed before and afterwards. Participants not only became more concerned about climate change and more supportive of environmental policy than they were at the beginning, but also became more positive and optimistic about personal behaviour change.

What about the potential barriers to looking at climate change and sustainable consumption in terms of fairness, discussed in Chapter 1? Participants generally had no problem with understanding how CO_2 emissions are effectively consuming a scarce resource. Most participants did not seem to focus on issues such as the personal costs of behaviour change, or whether a minority or majority of other people were currently co-operating. Most participants also strongly believed that there was an obligation to protect the environment for future generations.

However, while participants viewed the potential impacts of dangerous climate change as very bad and serious, there were two key factors that reduced the role these impacts played in participants’ reasoning about fairness. First, participants found it hard to ‘relate’ to information about the most severe potential climate impacts: they reported a sense of ‘detachment’ because these impacts are large scale and temporally distant, and involve complex causality and uncertainty. Second, the difficulties of enforcing collective action across national boundaries made it hard for participants to view the challenge of sustainable consumption in a global context in the same way as more standard co-operation dilemmas involving the consumption of common-pool resources within a domestic community.

For this reason, notions of environmental harm did less to motivate support for behaviour change and sustainability policy than the unfairness of widely unequal consumption in the context of collective efforts to reduce emissions. This was seen strongly in participants’ views about appropriate policy frameworks. For example, the vast majority of participants believed that participation in a scheme to reduce household emissions should be compulsory and not voluntary. And while some participants justified compulsion in terms of preventing climate change, for most it was driven by a desire to prevent unfair free-riding by others. Although the former was susceptible to concerns about enforcing international action on climate change, the latter could be applied purely within a UK context.

Lessons for policy-makers and advocates

Several important lessons emerge from the analysis of the focus groups and are set out here, together with some implications for policy-makers and advocates.

1 Fairness and citizenship can drive support for sustainable consumption – but only if people understand the social context of behaviour

People can approach consumption from more than one perspective – that of a citizen, a consumer, a parent, and so on – each of which brings with it a particular value orientation. For example, thinking about behaviour as a consumer tends to bring out self-interested and egocentric values and to highlight the personal issues involved. Thinking about behaviour as a citizen tends to focus individuals on the social consequences of their consumption and to bring out other-regarding concerns about fairness, as well as citizenship 'ideals' such as duty, responsibility and co-operation (Dobson, 2010).

The extent to which people view the problems of sustainable consumption from one perspective or the other will very much depend on the information they are given. As our groups showed, giving people information about the 'social context' of consumption – how their consumption might affect others and how others' consumption might affect them – enabled them to look at the issue in terms of fairness and citizenship.

> *People who are on higher incomes and are polluting are acting socially irresponsibly and therefore in a sense being unfair to their fellow citizens.*
>
> Male, Glasgow

Specifically, giving people information about excessive consumption or widely unequal consumption in the context of scarcity can trigger a set of 'fairness instincts'. The evidence from our groups suggests this can be a strong driver of support for measures to ensure sustainable consumption.

Participants often spontaneously resorted to analogies, metaphors and imagery borrowed from other social behaviours in order to help them think about the social dimension of carbon emissions. Tax and benefits were common analogies, particularly when talking about a fair distribution of burdens (likened to progressive taxation and means-tested benefits) or anger about free-riding (likened to benefit fraud and tax evasion). However, the most commonly used analogy – and the one that frequently stimulated the most discussion – was that of smoking in public places and the smoking ban.

> *It's like smoking, I suppose, because for years and years we've put up with people in restaurants smoking right into our faces, and as a non-smoker it was always unpleasant for me. You were made to feel a bit of a pariah for picking people up on it and now we actually accept that it is wrong.*
>
> Female, Glasgow

Clearly the appropriate use of analogy and imagery can play an important role in helping people think about the social context of sustainable consumption.

2 Ensuring everyone co-operates is key for perceptions of fairness – so regulation and enforcement can sometimes be crucial for sustaining public support for behaviour change

It is often a focus on others' behaviour that brings the fairness dimension into focus. A key aspect of this is that people react strongly against free-riding. When the earth's absorptive capacity for CO_2 was seen as scarce, participants generally viewed excessive CO_2 emissions as 'free-riding'. And they were often angry at the thought that they might make an effort to reduce their consumption while others failed to do so. Indeed, the evidence from our groups is that a desire to crack down on what is perceived to be free-riding

and unfair consumption by others can be an incredibly powerful source of support for sustainability policies.

> *I think for self-gratification I'd be happy to know I've done my bit, but I'd be dead annoyed to know that my next door neighbour didn't try.*
>
> Male, central London

It is worth noting that there was no particular desire among our participants to change their behaviour and no-one especially liked the idea of regulation for its own sake. Nevertheless, there was a strong feeling that if households were going to have to make sacrifices in order to reduce consumption, then everyone should be required to take part. As far as our participants were concerned, this was an issue of 'same rules for everyone'.

> *Everyone's main concern is that it has got to be one rule, it has got to be one rule for everybody.*
>
> Female, Coventry

While 'nudging' techniques might be very effective at influencing individual behaviour, evidence suggests that it is hard to sustain co-operation in contexts where others are seen to be free-riding. The implication is that rules and regulations may be very important in sustaining public support for behaviour change, and that in some contexts the absence of a framework requiring co-operation could be a barrier to sustaining public support.

3 People want to feel that they are co-operating in an endeavour. Even if compulsion is used, people want measures to target the product or activity rather than the individual

One of the strongest sentiments to come through in the discussions was that people were much happier with sustainability policies that were seen to focus on particular products or behaviours than with policies that were seen to focus specifically on an individual or household. Even if in practice there was little difference between the two (in terms of the consequences for the individual or household), participants thought policies that focused on the individual or household had an ethos of being policed by the authorities, whereas policies that addressed products or behaviours created a feeling of co-operating in a common endeavour.

> *There's a distinction between aiming it at the individual and aiming it at the activity … I think it's better to tax or regulate the activities rather than have a kind of 'pollution police' coming round to the door.*
>
> Male, Glasgow

There were two contexts in which this was especially notable. First, a clear majority of participants preferred measures focused on reducing the use of high-carbon products or activities (such as product bans or product taxes) to measures focused on reducing a household's aggregate emissions (such as personal carbon allowances). They felt it was easier to make normative judgements about specific products and behaviours than about aggregate energy use or aggregate emissions since they could readily imagine all sorts of legitimate reasons why someone might exceed a certain aggregate threshold.

Second, participants universally preferred 'upstream' measures (focused on energy producers and manufacturers) to 'downstream' measures (focused on households and individuals), even if the measures in question had exactly the same effect (such as removing choices from individuals or increasing costs). Philosophically and practically, there might be little difference between a scenario where government prohibits the manufacture of a particular item and a scenario where government permits its manufacture but discourages citizens from buying it. Both are aimed at constraining consumer freedom in similar ways but our participants felt there was all the difference in the world. Permitting the manufacture and

discouraging the consumer seemed to put the pressure on the individual to avoid making anti-environmental choices, and they did not like this at all. By contrast, participants seemed much more relaxed about the idea of government taking upstream action to remove the option of making anti-environmental choices.

So, clearly, in addition to considering how policies directly affect consumers, it is important to consider the manner in which they are implemented, which can make a big difference to their public acceptability.

4 People think sustainability policies should be progressive: the greatest burdens of behaviour change should be on those with the greatest ability to reduce their consumption or to finance reductions in their consumption

Participants saw the progressivity of policies to reduce consumption as key to ensuring fairness. They believed that everyone should be subject to the same requirements, but that the greatest burden for reducing consumption should fall either on those with the greatest ability to reduce their consumption (high consumers with lots of non-essential consumption) or on those with the greatest ability to finance reductions in their consumption (high-income households).

Participants were also sensitive to the fact that some households had specific requirements that should be accommodated within this framework – for example, those with medical conditions that required high energy use or those with large families. They were also sensitive to households' capability to adjust their behaviours; many participants commented that low-income or disadvantaged households would face particular barriers to behaviour change.

> *Well, the thing is, richer people can afford to have treble glazing. Poorer people, who have those landlords, I mean, forget it – they're not going to put treble glazing in any windows. My landlord isn't going to, so your heat loss is so much more and it's hugely poorer people who are going to be living in those sorts of conditions.*
>
> Female, central London

Given that nearly all participants thought it crucial for fairness to ensure that everyone co-operated in measures to reduce consumption, these sentiments are quite significant. Although non-participation is seen as free-riding in some circumstances, undermining co-operative instincts, it also seems that people are prepared to recognise a range of legitimate exceptions for those facing disadvantage or other barriers to behaviour change.

These points have implications for the design of sustainability policies if they are to be seen as fair. First, the implication is that people would want policies that place greater requirements on more carbon-intensive consumers. For example, progressive tariffs (such as rising block tariffs) will be more publicly acceptable than flat tariffs, and measures targeting the use of luxury carbon-intensive goods will be more publicly acceptable than those targeting the use of carbon-intensive goods that are perceived as necessities. Second, policies will need to make provision for those who have a good reason for high consumption or who face special barriers to behaviour change. There are many ways of achieving this, depending on the type of policy under consideration, ranging from bill capping or granting households extra credits, to schemes that compensate particular households for the effects of sustainability policies.

5 'Economic' approaches, and specifically taxation, are often seen to fail the fairness test although they are supported in some contexts

Economic approaches to sustainable consumption, where environmental resources are priced in such a way that consumption is reduced, were felt by many participants to fail the fairness test. Most believed that this approach was regressive, imposing a greater proportionate burden on those with lower incomes. They also felt that those on high incomes would simply be able to accommodate the extra costs without changing behaviour.

I think it's unfair on pensioners and students because they're not in a position to pay. If you're on low income you haven't got the ability to make a choice, which is different to if you've got the money and you decide.

Female, Barnet

Many of our participants saw economic approaches as breaching a sense of equal citizenship and 'same rules for everyone'. Here, issues of equal status and disrespect were prominent. Having considered the wider social impacts of over-consumption, many participants felt strongly that it was not something that could be 'made right' simply by paying more. For those participants who viewed consumption in normative terms (such 'fair' and 'unfair', or 'right' and 'wrong'), over-consumption seemed to require stronger action than simply the better pricing of environmental resources.

In terms of the acceptability of environmental taxation, participants repeatedly claimed that it would be more acceptable if they could be sure the proceeds were being spent on environmental protection. This might seem irrelevant, given that the purpose of tax in this context is to price environmental goods appropriately, but our participants found it was an important factor for any sense of tax legitimacy. So it seems that a key challenge for green taxes is to show that the revenue is being used for appropriate environmental purposes.

6 It may help to link the argument for behaviour change to the moral and policy arguments for sustainability

Our focus groups suggest that getting people to engage with the moral and policy issues underpinning sustainability policies can help to build support for behaviour change. Conventional approaches to behaviour change often bypass these moral and policy concerns, and are generally aimed at addressing people as consumers and appealing to self-interest. However, our groups show that people are engaged by the need to tackle climate change and that the normative issues involved – including fairness – can be an essential factor in building support for action.

People need to get some facts and see what is happening around them – not just see floods in the streets, think 'poor bugger' and then turn around and watch EastEnders – they need to realise the impact it's having and accept responsibility.

Male, Llanelli

A related lesson is that putting people in the role of decision-maker can work. Rather than asking participants to reflect on their own behaviour, we gave them information about climate change and household behaviour and asked them what they thought should be done. Most participants were engaged by the subject matter and several commented that it had helped them look at the issue in a different light.

I think it makes a big difference to have the facts like this. Personally I haven't been exposed to this kind of thing. People do need to be exposed to it in this kind of way.

Female, central London

It is also noteworthy that, despite our approach of putting participants in the role of decision-maker, they clearly still thought about the topics in relation to themselves. For example, much of the stimulus material involved getting participants to discuss the behaviour of others (whether in society as a whole, or fictional characters) and to formulate policies in that context. However, it became clear that many envisaged these policies applying to them too – and participants would often illustrate the effects of the policies they were discussing with reference to their own lives. Furthermore, there is some evidence from our 'before and after' surveys that the exercises in our groups also influenced the way in which some of our participants thought about their own behaviour, shifting them in a pro-environmental direction.

7 It is important to understand the difference between people liking a policy and supporting a policy because they see it as legitimate

The approach to climate policy and advocacy implied by this analysis is very different from the standard approach, which tends to assume that maximising public acceptability means making sustainability policies as attractive as possible to the consumer. This standard approach results in a focus on issues such as incentives, voluntarism or a light-touch regulatory approach, along with a communications strategy that downplays the burdens and inconveniences of behaviour change. Of course, where this approach is successful in changing behaviour, there is a good argument to be made for it.

However, the results of our groups suggest that other approaches are possible – and might be effective. Despite participants shifting towards a pro-environmental view during the groups (tested in the 'before and after' survey), it should be emphasised that there was no great groundswell of enthusiasm to change behaviour, even after being presented with evidence on the possible impacts of climate change. There was certainly no sense that people would welcome the need to make lifestyle changes. But, despite this, participants sometimes expressed very strong support for sustainability measures – including suggesting some quite draconian policies. This is not inconsistent but is testament to an important distinction: that between liking a policy, on the one hand, and supporting a policy because you think it is necessary, legitimate and fair, on the other.

> *Well, I wouldn't like* doing *it. I would have to make changes that I wouldn't like, but I feel that it's necessary and it seems fair to me.*
>
> Female, Glasgow

The way in which the UK and many other countries have created widespread public acceptance of (and compliance with) frameworks such as tax systems and speed limits is not by trying to make paying tax or driving slower seem attractive, but by ensuring people understand the broader social issues at stake and see the behavioural requirements as necessary and legitimate Similarly, attempts by government, industry and NGOs to encourage behaviour change, or to build support for measures to ensure sustainable consumption, may well be more effective if they generate a sense of public legitimacy. For example, it is perhaps understandable that communications on behaviour change tend to shy away from conveying any of the burdens of the changes. However, far from avoiding this, it may actually be more important to emphasise the fact that everyone will be required to shoulder the burden.[45] The distinction between liking a policy and supporting it because you think it is necessary and legitimate is something that policy-makers may well need to become more attuned to in future.[46]

Challenges to stakeholders

There are some important challenges for particular stakeholder groups that emerge from this analysis, many of which imply a change in orientation in how they engage with the public to promote behaviour change. Here, we briefly set out some key challenges and highlight ideas for future research.

Government – central and local

This research suggests there is scope for both central and local government to promote behaviour change by focusing on citizenship and responsibility, as well as on consumerism and self-interest. Support for action, including personal behaviour change, can be built by engaging people in the reasons for preventing dangerous climate change and in the fairness issues that arise from an unequal consumption of a scarce resource. Crucially, these are issues on which people expect the government to address them as citizens, and on which people think government is the legitimate voice.

The evidence of our groups suggests that, when people look at sustainability through the lens of citizenship, they want a framework that ensures everyone is involved in efforts to reduce consumption,

rather than leaving it solely to voluntarism. Specifically, people want to know that if they act others will be acting too, and that the efforts and burdens of behaviour change will be shared fairly. Here, government needs to understand the importance of rules and regulations in sustaining co-operation; 'nudging' can be useful, but might not be enough on its own.

Environmental groups

Campaigning organisations have a real opportunity to engage more deeply with the fairness dimension of sustainable consumption in order to build public support. When consumption is looked at in its social context, people can react strongly against excessive or wasteful consumption. Evidence from our groups suggests that a campaign to mobilise people against unfair free-riding could be especially powerful in motivating support for action. As we have seen, this frame is also a way of talking about fairness in a UK context, thereby preventing legitimate concerns about international co-ordination from undermining people's willingness to co-operate.

A big theme to come out of our focus groups is the need for more public education about sustainable consumption. Participants were engaged by the information they were given, and many expressed a desire to know more. Given our claim that providing people with information about the social context of consumption is an important route to building support for sustainability, it is clear that communications from NGOs and government can play a key role here. We found that information about scarcity and about wasteful consumption was especially important.

Media

Like environmental groups, the media also have a key role in communicating information. Our participants sometimes commented that the way in which climate change is reported in the media failed to help them think about its causes and impacts. They perceived that climate change received coverage at times of extreme weather events, but many said there was little to help them understand the long-term risks and impacts.

Media outlets could also play an important role by reporting instances of excessive and, especially, wasteful environmental consumption. In some contexts, our participants felt this was as bad as any other type of anti-social behaviour. It would be an important development to see the newspapers that campaign energetically against other anti-social behaviour turn their focus on the social impacts of excessive or wasteful consumption.

Businesses

Although we have called for a shift from consumerism towards citizenship in government communications, many businesses necessarily engage with the public through a consumer frame. This means that businesses may be ill-placed to promote messages about fairness or the responsibility to cut consumption (especially if they have a direct interest in promoting consumption).

However, businesses can promote behaviour change by helping consumers to make the right choices. The participants in our groups were clear that they wanted businesses to be in the front line of action to cut emissions, rather than simply passing responsibility on to the consumer. Businesses therefore need to form an alliance with the consumer on sustainability. This could mean, for example, giving people information so that they understand the impact of different choices or helping them to reduce wasteful consumption. It could also mean co-ordinating with government on upstream action to move towards sustainable production.

Forming an alliance with the consumer also means businesses (along with government estates) demonstrating that they are taking action to cut their own carbon footprint. Our participants suggested

that, in order to cut their own emissions, they would want to be sure that business and government were playing their part too and that the burden did not just fall on individuals and households.

Researchers

These focus groups have been exploratory, and have thrown up several areas where far more detailed research is needed than the scope of our project permitted.

Given the role of scarcity in understanding the fairness issues involved in the consumption of common-pool resources, it would be of interest to look at more vivid or compelling ways to analyse, describe and present notions of climate scarcity. This might include helpful ways to think about the earth's absorptive capacity as a common-pool resource.

More work is also needed on what people think is fair in terms of reducing household emissions. For the fictional characters used in our stimulus material, the characters' emissions rose with income (reflecting this trend among the population as a whole), but this made it difficult to separate views about fairness related to inequalities in consumption from views about fairness related to ability to pay. It is important to investigate the relative contributions these different factors make to people's judgements about fairness. Similarly, when it comes to collective schemes to reduce consumption, far more work is needed to understand the kinds of exceptions that people are prepared to tolerate before a willingness to co-operate begins to disintegrate. This is especially important because some households will have limited capabilities to adjust their behaviour.

Finally, it is important to look at the extent to which the attitudinal issues explored in these focus groups map onto behaviour. On the one hand, there is a well known 'attitude–behaviour' gap, especially in environmental behaviours, where people's pro-environmental attitudes may not be reflected in subsequent behaviour. On the other hand, many behaviours that are motivated by fairness and obligation, such as paying taxes and obeying the law, demonstrate a much smaller attitude–behaviour gap than when behaviours are viewed simply as consumer choices. In either case, understanding the interplay of attitudes and behaviour in this context is essential to drawing firmer conclusions about the potential of fairness and obligation as motivations for pro-environmental behaviour.

Conclusion

As environmental policies have become more of a priority over the last two decades, attention has often focused on the ways in which public attitudes can act as a constraint on the sustainability agenda. In this report, we have tried to show that public attitudes can also be a resource. Yes, there is still a great deal of work to be done to build public support for environmental behaviour change, but this report highlights some possible approaches that can harness public attitudes, rather than trying to work around them.

In particular, the evidence presented suggests that pro-social instincts of fairness and reciprocity can be powerful drivers of attitudes to consumption. Rather than simply promoting behaviour change through a consumer paradigm, policy-makers and advocates must look at what arguments, narratives and policies can best tap into this powerful sense of fairness. Otherwise, we will be missing an important resource in the fight against climate change and environmental degradation.

Notes

Introduction

1 It is tempting to translate the idea of consumption (an economic category) directly into the idea of consumers in a marketplace, but this is only one 'mode' in which we make decisions about consumption. We also make decisions about consumption as citizens, parents, employees, and so on.

2 Some might be frustrated at the principle that government strategies to encourage behaviour change often shy away from communicating the moral dimension of sustainable consumption and focus instead on 'what works'. That is not our complaint here. Rather, we are interested in framing sustainable consumption issues in terms of fairness precisely because linking the argument for behaviour change to the underlying reasons for averting dangerous climate change might actually be more effective at driving behaviour change.

3 Bamfield and Horton (2009) have written up some of this research.

Chapter 1

4 Some (for example, Klosko, 1992) would go further, arguing that bearing the burdens of preventing climate change is not simply a duty of citizenship but a political obligation, given that any citizen automatically receives the benefits of others' efforts to maintain an optimum climate.

5 The length of time carbon dioxide remains in the atmosphere before removal (its 'atmospheric lifetime') is between 50 and 200 years; methane remains for an average of 12 years.

6 Carbon dioxide is naturally emitted from animal and plant respiration and also from 'outgassing' from volcanoes and the oceans. Carbon dioxide is naturally removed from the atmosphere by plant photosynthesis and by dissolving in the oceans. Through the natural carbon cycle, the land system both removes and releases into the atmosphere around 120 gigatonnes of carbon (GtC) each year; the oceans around 90 GtC (IPCC, 2007a).

7 Annual global emissions of carbon dioxide from human activity are currently equivalent to 8 GtC. In fact, this increase in carbon dioxide emissions has partly been offset by the fact that the land and oceans have since become net removers of carbon dioxide from the atmosphere as its concentration has increased. Between 2000 and 2005, the annual net flow of carbon dioxide from the atmosphere to the land has been around 3 GtC. Nevertheless, it only removes a proportion of the carbon dioxide released into the atmosphere by human activity. In recent decades, around half of the carbon dioxide emissions released into the atmosphere each year through human activity have remained there (IPCC, 2007a).

8 The IPCC report of 2007 confirmed this concept of a threshold but also included discussion of the relative uncertainty about the specific point above which concentrations will trigger dangerous climate change (IPCC, 2007a). According to the IPCC, the CO_2-equivalent concentration range for keeping temperature rise to 2ºC is 445–90 ppmv, with the lower end of that range being most

appropriate for meeting the target. The Stern Review also links stabilisation at 2ºC with a threshold of 450 ppmv (N. Stern, 2007).

9 This contrasts with 'pure' public goods, which are joint in consumption.

10 To say the earth's absorptive capacity is 'scarce' in this context is not necessarily to say that it is finite, since it is renewable. Like many resource systems, this absorptive capacity is a 'stock' of resources, some of which can be consumed without harming the stock itself. Because it is renewable (GHGs are removed from the atmosphere via sinks), there is a replenishment rate for the stock. If the rate at which the resource is consumed does not exceed the replenishment rate, the stock will be sustained over time; if it exceeds the rate of replenishment, the stock will be depleted. This is why, over a fixed period of time and for a given sink volume, there is indeed a finite amount of GHGs that can be emitted into the atmosphere if we are to avoid dangerous climate change.

11 The free-rider problem is classically known as the 'tragedy of the commons' (Hardin, 1968) and also the 'problem of collective action' (Olson, 1965).

12 If the resources being maintained are indispensable for human welfare – and so the free-rider could not do without them – this adds a further dimension to the unfairness. By avoiding sharing the burdens of maintaining the resources, the free-rider is assuming a liberty that they would not be willing to extend to others.

13 Cullity (1995) also contains a detailed discussion of this aspect of free-riding.

14 The principle is sometimes called 'mutuality of restriction'.

15 See also Rawls (1964) and, for a detailed discussion of the way in which fairness can be the basis of an obligation to co-operate, Klosko (1992).

16 For public goods that are not only non-excludable (people cannot be excluded from using or receiving it), but also compulsory (people cannot escape from using or receiving it), such as national defence or clear air, this constraint is especially obvious: if anyone receives the good, all must receive it.

17 These properties of non-excludability (and compulsoriness) and indispensability explain why attempts to ground political obligations in the notion of consent (for example, Nozick, 1974) tend to come unstuck. The fact that the benefits of a public good (such as the earth's absorptive capacity) are non-excludable and compulsory means that everyone must receive them, making the notion of consent redundant. Also, the fact that the benefits of a public good (again, such as the earth's absorptive capacity for CO_2) are indispensable to human welfare makes the notion of consent redundant, since it would be implausible for a putative non-co-operator to argue that they would prefer not to enjoy these benefits.

18 This is particularly the case if, as in Box 1 above, one views the obligation to co-operate in maintaining a public good as being generated through receiving the benefits of that good – in other words, the community bearing the burdens of co-operation must be the same as the community receiving the benefits. For this to hold, it would require a very broad concept of an international and intergenerational political community.

19 In the intergenerational and international co-operation dilemma, the harms generated by free-riding (those of dangerous climate change) are due to the non-excludable nature of climate goods. In the domestic co-operation dilemma, the harms generated (reduced consumption for others) are due to the rival nature of the earth's absorptive capacity (given an imposed emissions limit).

20 Recent deliberative research (Bird and Lockwood, 2008) suggests that this more sophisticated approach, permitting principled deviations from an equal per capita allocation, corresponds quite well with how people naturally reason when discussing the issue.

21 Gintis, *et al.* (2005) discuss this further.

22 Ledyard (1995) contains a review of public goods games.

23 A further minority of the population are unconditional altruists – always co-operating and never punishing. Kahan (2005) reviews different attitudes sets within populations.

24 This is indeed the standard account of co-operation in evolutionary biology and economics; see, for example, Trivers (1971) and Axelrod and Hamilton (1981). Such reciprocity – co-operation in expectation of future payback – is sometimes called 'weak reciprocity'.

25 This kind of reciprocity – co-operation without the expectation of future payback – is sometimes called 'strong reciprocity'. Gintis, *et al.* (2005) contains more on this.

26 The numbers agreeing that they should obey the law only fell away when obeying would 'cause me great harm' (just 19 per cent agreed in this case). Interestingly, when the same survey asked people about the need to comply with other familiar moral requirements, such as keeping promises, telling the truth and helping those in need, responses showed a similar pattern of support depending on whether these requirements inconvenienced people, greatly inconvenienced them or caused them great harm. The authors conclude that obligations to obey the law are therefore psychologically similar to other familiar moral requirements.

27 As one participant put it, 'The size of the group really does not distinguish what is right from what is wrong, whether you were a group of two or 200 million' Klosko (2008, p. 236).

28 This was seen vividly in an experiment in Minnesota where the information that had the strongest effect on increasing tax compliance was that the vast majority of Minnesotans were already complying with their obligations to pay taxes (Coleman, 1996).

29 Here, 'norms' are moral principles and intuitions, rather than descriptions of common behaviours. 'Pro-social values' are other-regarding concerns that focus an individual on issues beyond their immediate family and social circle.

30 Given this approach of placing participants in the role of decision-maker, it is important to consider the extent to which the attitudes expressed in the groups might relate to (and influence) personal behaviour. We consider this later in the analysis, although it is worth noting that participants very often used themselves as a point of reference in their discussions of society and policy.

31 One can also look at these issues of co-operation and free-riding at the level of nation states within an international agreement, but that is not the focus of this project.

Chapter 2

32 For example, a recent Ipsos MORI poll (January to March 2010) found that 15 per cent of the population did not think the earth's climate was changing, compared with 78 per cent who did (Ipsos MORI, 2010). A recent ICM poll (January 2011) found just 14 per cent saying that global warming poses no threat, compared with 83 per cent who thought it was a threat (Carrington, 2011).

33 We were not particularly interested to know whether those who accept climate change believe it is predominantly man-made or natural; all that was needed to explore the project hypothesis was an acceptance that human activity could be a contributing factor – an issue that was discussed directly in the deliberative exercises.

34 In Defra's national survey (2007), 8 per cent of the population strongly agreed with the first statement and 7 per cent strongly disagreed with the second statement.

35 In Defra's national survey (2007), 12 per cent of the population strongly agreed with the first statement and 6 per cent strongly disagreed with the second statement.

36 The combined block method consists of 14 questions. On the basis of their responses, each participant is given a set of 'scores' which represent how closely their answers match each segment profile. The segment profile for which they have the highest score determines their categorisation.

37 Limiting temperature rises to 2ºC is agreed internationally to be a realistic target, as enshrined in the United Nations COP15 agreement at Copenhagen (UN, 2009).

38 The IPCC report of 2007 confirmed this concept of a threshold but also included discussion of the relative uncertainty about the specific point above which concentrations will trigger dangerous climate change (IPCC, 2007a). According to the IPCC, the CO_2-equivalent concentration range for keeping temperature rise to 2ºC is 445–90 ppmv, with the lower end of that range being most appropriate for meeting the target. The Stern Review also links stabilisation at 2ºC with a threshold of 450 ppmv (N. Stern, 2007).

39 Both the 2007 IPCC report and The Stern Review represent accredited scientific consensus on the many impacts of increased warming in the climate system (IPCC, 2007b; N. Stern, 2007).

Chapter 3

40 As part of this discussion, participants were informed that the scientific literature acknowledges some uncertainty in the different predictions of climate change impacts. Where uncertainty relates to specific outcomes that use expert judgement and analysis of evidence, the IPCC uses a scale of likelihoods to express the probability of the occurrence of a particular impact (ranging from 'virtually certain', representing a probability above 99 per cent, down to 'exceptionally unlikely', representing a probability below 1 per cent). For example, the IPCC describes the increased frequency of heavy rainfall (leading to increased incidences of flooding) as 'very likely' based on current climate projections, representing a probability of 90 per cent or more. The increased occurrence of heatwaves is also deemed 'very likely', while sea-level rises are termed 'likely', representing a probability between 66 per cent and 90 per cent. Participants were also made aware of the fact that there could be positive impacts of climate change, such as increased crop yields in temperate regions.

41 Interestingly, however, while the imperative to act often tended to be expressed in terms of avoiding harmful climate impacts, this was not necessarily the strongest factor in driving support for sustainability policies – a point examined in more detail in later chapters.

42 This view that high-emitting behaviour could only be described as 'wrong' if the person was aware of the issue of carbon emissions and climate change often gave rise to discussions about the importance of educating people to understand the impact of their behaviour.

Chapter 4

43 Note that these were general objections to an economic approach rather than to taxation as such. For example, the same objections were raised about tradable carbon credits in a scheme of personal carbon allowances.

> *Some people have plenty of money to play with so they might think 'I have millions in the bank so it doesn't matter if I exceed my allowance because I can buy more.'*
>
> Male, Llanelli

Chapter 5

44 That is, movement in a pro-environmental direction in terms of participants' position on the 'willingness to act' axis of Defra's segmentation model.

Conclusion

45 As psychologist Tom Tyler has put it, surveying a variety of research on this issue, 'If government is to elicit willing sacrifice on behalf of the polity it must impose its demands in a way that is perceived to distribute the burden equally' (Tyler, 1984, p. 219).

46 This distinction is related to the distinction between consumers and citizens. When we look at people as consumers we are interested simply in their preferences, whereas when we look at citizens we are also interested in their judgements.

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Appendix I

The Defra segmentation profiles

This Appendix illustrates some of the main characteristics of the seven segments of Defra's segmentation framework. The text has been extracted from *A Framework for Pro-environmental Behaviours* (Defra, 2008a).

Group 1: 'Positive Greens' (18 per cent of the population)

- This group assess themselves as acting in more environmentally friendly ways than any other group does. Additionally, they are the most likely group to want to live a more environmentally friendly life than they currently do.

- They are the most likely by far to be in AB socio-economic groups (SEGs) and have the highest levels with household incomes of £40,000 and over per annum. They are the most likely to have a degree, and to read *The Guardian*, *The Independent* or *The Times*. Their profile is biased towards middle age (41–64), and owner-occupancy.

Group 2: 'Waste Watchers' (12 per cent of the population)

- This group are doing more than any other (except group 1) to help the environment. However, this behaviour is driven by an urge to avoid waste rather than seeking to reduce their environmental impact.

- There is a middle age and older age bias. One third are aged 65 and over (nearly twice as likely as average), while less than a quarter are 40 and under (half as likely as average). One third are retired, and many are on low incomes (two fifths on £20,000 per annum or less). Over half own their homes outright and they are the most likely to read the *Daily Mail* or *The Daily Telegraph*.

Group 3: 'Concerned Consumers' (14 per cent of the population)

- This group hold broadly pro-environmental beliefs, although with less conviction than groups 1 and 2. Members of this group are particularly sympathetic to the concept of 'climate change', acknowledging their personal impact and seeing taking action as important. Conversely, they show the strongest rejection of any group of the idea that we are reaching our limits to growth and they also doubt that an ecological crisis is imminent.

- One third are aged 30–40, and there are the lowest levels aged 65 and over. There is a slight bias towards ABC1 SEG. One third have household incomes of £40,000 and above per annum and, notably, this includes the highest level of all groups with household incomes of £60,000 and above (nearly one fifth of the group). They are the most likely to be owner-occupiers with a mortgage, and the most likely to have dependent children (along with group 5). They are the second most likely to have a degree.

Group 4: 'Sideline Supporters' (14 per cent of the population)

- This group have a generally pro-environmental world view, although these beliefs are held relatively weakly across the board. Members of this group are second only to group 1 in anticipating an imminent crisis; however, they are more likely to think that humans (possibly other people) will find the solution.

- Members of this group span all ages, although under 30s are over-represented. They have average levels of household income, but with a bias towards C2DE SEGs. They are more likely than average to read the *Daily Mail* or *The Sun*, and fewer than average are educated to degree level.

Group 5: 'Cautious Participants' (14 per cent of the population)

- This group's environmental world view is close to the average for the population: members of this group tend to agree there is a pressing crisis, and that there are limits to growth. They are pessimistic about our ability to tackle climate change, but recognise its impacts.

- This group have a younger than average age profile, with one quarter aged 30 and under, and nearly as few aged 65 and over as group 3. Equal with group 3, members of this group are the most likely to have dependent children; however, they are slightly more likely to be renting than group 3. They are the third most likely to have a degree, after groups 1 and 3.

Group 6: 'Stalled Starters' (10 per cent of the population)

- This group present somewhat confused environmental views. Mostly the views are strongly negative: members of this group have the highest level saying climate change is too far in the future to worry about and, with group 7, the highest levels believing that the environmental crisis has been exaggerated (about half). However, they are also the most likely (with group 1) to agree that there are limits to growth and that humans are damaging nature; if the group genuinely hold these views, they appear not to want to act on them.

- They have the lowest social profile of any group (nearly half are DE SEGs), and the lowest levels of income (nearly half are on less than £20,000). They tend to be younger or older, with middle-aged people under-represented, and the group include more BMEs than average. They have the lowest levels of qualifications of any group (half have none), and are the most likely not to be working. They are the most likely group to read *The Sun*, the *Daily Mirror* and the *News of the World*.

Group 7: 'Honestly Disengaged' (18 per cent of the population)

- This group's ecological world view is predominantly shaped by a lack of interest and concern. However, members of this group are also sceptical about the current environmental threat (half think it has been exaggerated). They are nearly as likely as group 6 to deny that their behaviour contributes to climate change and more likely than most to think the problem will be solved without people needing to make changes to their lifestyles.

- While the group spans all ages, under 30s are over-represented (comprising more than a quarter). In terms of social grade, members of this group are slightly more C12DE SEGs, with ABs under-represented; income levels are also slightly below average. Similarly, slightly fewer than average of this group have degrees. They are more likely than average to be working full-time, to be renting, and to read *The Sun*, the *News of the World* and the *Daily Star*.

Appendix II

Case studies of how participants' views changed

This Appendix illustrates some of the changes in participants' attitudes during the focus groups, looking at five case studies.

1 Steve

Before: Honestly Disengaged
After: Cautious Participant

At the start of the group discussion, Steve was quite sceptical about climate change.

> *Climate change has been happening since the earth began, so a lot of it I believe is government making more out of it than there actually is.*

Learning more about the science of climate change made him more convinced about the issue – and more convinced that something needed to be done.

> *When you think about things more you think differently … Obviously something needs to be done.*

This can be seen in Steve's survey responses to the questions on climate change and questions on environmental policy.

Climate change questions

	Statement	Before	After
Q9	The so-called 'environmental crisis' facing humanity has been greatly exaggerated	Tend to agree	Tend to disagree
Q11	The effects of climate change are too far in the future to really worry me	Neither agree nor disagree	Strongly disagree

Policy questions

	Statement	Before	After
Q2	For the sake of the environment, car users should pay higher taxes	Neither agree nor disagree	Tend to agree
Q3	People who fly should bear the cost of the environmental damage that air travel causes	Neither agree nor disagree	Tend to agree
Q5	People have a duty to recycle	Neither agree nor disagree	Tend to agree

Perhaps most strikingly, by the end of the group Steve had become more motivated to make changes to his lifestyle. This can be seen in the shift in his answers to the questions on personal behaviour.

Personal behaviour questions

	Statement	Before	After
Q6	Which of these best describes how you feel about your current lifestyle and the environment?	I'm happy with what I do at the moment	I'd like to do a bit more to help the environment
Q10	I find it hard to change my habits to be more environmentally friendly	Neither agree nor disagree	Tend to disagree
Q14	It takes too much effort to do things that are environmentally friendly	Tend to disagree	Strongly disagree

It was primarily the changes in Steve's responses to questions 2, 3, 6 and 11 that lay behind his shift from Honestly Disengaged to Cautious Participant.

2 Robert

Before: Stalled Starter
After: Waste Watcher

Robert made some interesting attitudinal shifts during the course of the discussions, including becoming more likely to view climate change as real and serious.

Climate change questions

	Statement	Before	After
Q9	The so-called 'environmental crisis' facing humanity has been greatly exaggerated	Tend to agree	Neither agree nor disagree
Q11	The effects of climate change are too far in the future to really worry me	Neither agree nor disagree	Tend to disagree

At the outset, Robert was relatively unsupportive of changing behaviour, though during the group came to reflect on his own failure to act.

> *People in my street must think I'm a complete so and so because they've all got the red boxes out, they've got the bags, the newspapers, the lot and I don't do any of it so they probably look at me and think 'he's an absolute idiot, he should be doing it'. A bit of a hypocrite, me.*

By the end of the group, while still remaining unconvinced by environmental policies on car use and aviation, Robert had made a large pro-environmental leap in terms of the importance of recycling and also his own desire to be more environmentally friendly in his lifestyle.

Policy questions

	Statement	Before	After
Q2	For the sake of the environment, car users should pay higher taxes	Strongly disagree	Strongly disagree
Q3	People who fly should bear the cost of the environmental damage that air travel causes	Strongly disagree	Tend to disagree
Q5	People have a duty to recycle	Strongly disagree	Tend to agree

Personal behaviour questions

	Statement	Before	After
Q6	Which of these best describes how you feel about your current lifestyle and the environment?	I'm happy with what I do at the moment	I'd like to do a lot more to help the environment
Q10	I find it hard to change my habits to be more environmentally friendly	Tend to agree	Strongly disagree
Q14	It takes too much effort to do things that are environmentally friendly	Tend to disagree	Tend to disagree

The change in Robert's responses to questions 10 and 11 were primarily behind his shift from Stalled Starter to Waste Watcher.

3 Harry

Before: Cautious Participant
After: Positive Green

Several factors were behind Harry's shift from Cautious Participant to Positive Green. Like other participants, he became strongly convinced that climate change was real and serious as a result of discussing some of the science of climate change.

Climate change questions

	Statement	Before	After
Q9	The so-called 'environmental crisis' facing humanity has been greatly exaggerated	Tend to disagree	Strongly disagree
Q11	The effects of climate change are too far in the future to really worry me	Neither agree nor disagree	Strongly disagree

During the discussions, Harry became more and more supportive of the need for government intervention to reduce emissions.

> *I kind of feel that if we regulate and make the changes necessary to safeguard the future, your kids aren't going to be worrying … But if you're relying on voluntary action to help save the planet, then in fifty years your kids' futures are not going to be so rosy as what ours are now.*

Accordingly, his survey responses show him becoming more supportive of environmental policies on car use and recycling. He also displayed a particularly significant shift in his answers to questions relating to his own environmental behaviour and the scope for changing this.

Policy questions

	Statement	Before	After
Q2	For the sake of the environment, car users should pay higher taxes	Tend to disagree	Tend to agree
Q3	People who fly should bear the cost of the environmental damage that air travel causes	Tend to disagree	Tend to disagree
Q5	People have a duty to recycle	Neither agree nor disagree	Tend to agree

Personal behaviour questions

	Statement	Before	After
Q6	Which of these best describes how you feel about your current lifestyle and the environment?	I'd like to do a bit more to help the environment	I'd like to do a lot more to help the environment
Q10	I find it hard to change my habits to be more environmentally friendly	Tend to agree	Tend to disagree
Q14	It takes too much effort to do things that are environmentally friendly	Neither agree nor disagree	Tend to disagree

It was the change in Harry's answers to questions 5, 10, 11 and 14 that drove his shift from Cautious Participant to Positive Green.

4 Yvette

Before: Honestly Disengaged
After: Concerned Consumer

Yvette entered the focus groups in the Honestly Disengaged segment. She remained sceptical about the extent of the problem of climate change and resistant to environmental policies on car use and aviation. However, she came to see the issue as a problem affecting her and ended as a Concerned Consumer.

Climate change questions

	Statement	Before	After
Q9	The so-called 'environmental crisis' facing humanity has been greatly exaggerated	Neither agree nor disagree	Tend to agree
Q11	The effects of climate change are too far in the future to really worry me	Tend to agree	Strongly disagree

Policy questions

	Statement	Before	After
Q2	For the sake of the environment, car users should pay higher taxes	Strongly disagree	Tend to disagree
Q3	People who fly should bear the cost of the environmental damage that air travel causes	Strongly disagree	Tend to disagree
Q5	People have a duty to recycle	Strongly agree	Strongly agree

At certain points throughout the discussion, Yvette exemplified a decidedly consumerist perspective on behaviour change.

> *Some might be conscious of [their emissions], but we're careful because of money. I don't really think about the climate. I think about the bills.*

After engagement with information on climate change, she argued that people should be encouraged to cut their carbon emissions and emphasised the need to find a 'happy medium' in terms of their own consumption. Yvette's survey responses illustrate the effect of this focus on personal behaviour, with important shifts in a pro-environmental direction.

Personal behaviour questions

	Statement	Before	After
Q6	Which of these best describes how you feel about your current lifestyle and the environment?	I'm happy with what I do at the moment	I'd like to do a bit more to help the environment
Q10	I find it hard to change my habits to be more environmentally friendly	Strongly agree	Tend to disagree
Q14	It takes too much effort to do things that are environmentally friendly	Tend to disagree	Tend to disagree

It was the changes in Yvette's responses to questions 6 and 10 that were primarily responsible for her shift from Honestly Disengaged to Concerned Consumer.

5 Katy

Before: Stalled Starter
After: Cautious Participant

Katy entered the focus group with a segmentation profile that almost put her in the Honestly Disengaged category and her answers to many of the questions regarding environmental policy and behaviours reflected that.

She started the group not especially bothered about the impacts of climate change and not thinking they would apply to her.

> *It's not going to happen in all our lifetime though, so you're not that bothered about it.*

However, the discussions on climate change, and the information provided, had a strong effect on her – and this can be seen in the shift in her response to question 11.

Climate change questions

	Statement	Before	After
Q9	The so-called 'environmental crisis' facing humanity has been greatly exaggerated	Neither agree nor disagree	Neither agree nor disagree
Q11	The effects of climate change are too far in the future to really worry me	Tend to agree	Tend to disagree

In the discussions of environmental policy, Katy raised objections to voluntarism.

> *Well it's voluntary now and not a lot of people are doing anything about it.*

Her survey responses after the group show that, while she did not move to a pro-environmental position, her opposition to policies on car use and aviation disappeared. On one of the personal behaviour questions, she also became keener to do more to help the environment.

Policy questions

	Statement	Before	After
Q2	For the sake of the environment, car users should pay higher taxes	Strongly disagree	Neither agree nor disagree
Q3	People who fly should bear the cost of the environmental damage that air travel causes	Strongly disagree	Neither agree nor disagree
Q5	People have a duty to recycle	Strongly agree	Strongly agree

Personal behaviour questions

	Statement	Before	After
Q6	Which of these best describes how you feel about your current lifestyle and the environment?	I'd like to do a bit more to help the environment	I'd like to do a lot more to help the environment
Q10	I find it hard to change my habits to be more environmentally friendly	Tend to agree	Tend to agree
Q14	It takes too much effort to do things that are environmentally friendly	Neither agree nor disagree	Neither agree nor disagree

It was the change in Katy's responses to questions 6 and 11 that shifted her from the Stalled Starter segment to the Cautious Participant segment.

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